# Sustainability Report **2014**





# ABOUT THIS REPORT

Welcome to Antofagasta Mineral's eighth annual Sustainability Report where we summarize our strategy, priorities and performance for our most material social and environmental issues, in accordance with the GRI G4 Core option, and the GRI Mining and Metals Supplement standards.

More information on Anexxes, p. 59.

The Report focuses on the year 2014, from January 1 to December 31 and includes data from previous years to provide further context for Antofagasta Minerals and its' three operations (Los Pelambres, Centinela and Michilla). Where relevant, the report also includes data on Antucoya, the project that will commence production in 2015. This report also refers to the main sustainability related events occurring up to March 31, 2015.

This report was verified by PricewaterhouseCoopers (PwC). The information on CO<sub>2</sub> emissions was verified by SGS.<sup>1</sup>

S More information on Anexxes p. 58, Verification report.

The preparation of this Report was led by Antofagasta Minerals Public Affairs Department with the support of external consultants.

This department also reviewed the alignment GRI Principles and was responsible for obtaining and validating the information.

1 www.sgs.com

This report is available at www.aminerals.cl and www.antofagasta.co.uk

#### CONTACT INFORMATION

For comments or questions regarding the Sustainability Report please contact inforeporte@aminerals.cl

# MATERIALITY ANALYSIS

Antofagasta Minerals conducted a formal materiality assessment that included the following perspectives:

- The opinion of its major stakeholders.<sup>1</sup>
- S Relevant topics for the business.<sup>2</sup>
- The mining<sup>3</sup> sector's emerging issues.

The themes identified were assessed combining two criteria: Their relevance –from the three perspectives listed above–, and their impact on business.

In completing the analysis, Antofagasta Minerals and the operations conducted a materiality workshop in March 2014. Their combined assessment was also subjected to review by the management team at each operation and finally discussed in the Group's Executive Committee.

#### MATRIX OF MATERIAL ISSUES

Antofagasta Minerals



Impact on the business

<sup>1</sup> Input from internal documents: Annual Perception & Reputation Report 2013 & 2014 (consults workers, contractor workers, local authorities and opinion leaders), annual climate survey, annual sustainability investor roadshow; and reports by third parties.

<sup>2</sup> Input from: Group Vision and strategic objectives, Annual Report investor presentations and benchmark of sustainability reports.

<sup>3</sup> Input from: ICMM, Japan Bank for International Cooperation, Equator Principles, International Finance Corporation, GRI G4 and Minning and Metals Supplement, ISO 26000, Integrated Reporting Initiative and benchmark of sustainability reports.

# CONTENTS

#### O1 Introduction

02 Letter from the CEO

03 Sustainability and Stakeholder Management Committee

#### **O2** Antofagasta Minerals

04 Our operations

06 Distributing value



# LETTER FROM THE CEO

Diego Hernández



The year 2014 was marked by decisions that tested our ability to be consistent with our Charter of Values. Both in the creation of Minera Centinela and in the announcement of the end of our operations at Michilla, we acted in accordance with our values.

We are convinced that mining is and will continue to be an essential driving force for the development of Chile and its inhabitants. As the largest private mining group in the country, we want to strengthen our business and generate better opportunities for our workers as well as for the communities in the areas where we develop our operations and projects.

For this reason Antofagasta Minerals participates actively –both directly, as well as through the Mining Council– in the search of solutions to the principal challenges facing the industry: competitiveness; water, energy and land shortages; the protection of the lives and safety of workers; and improving relations with the communities and other stakeholders.

In 2014 we had some very difficult times as a result of three fatal accidents which cost the lives of five of our colleagues. We need to continue to work even harder in the full implementation of the health and safety model we introduced recently. We need to continue increasing vigilance: no production goal justifies endangering lives.

However, it was also a very significant year for Antofagasta Minerals. We made important progress in consolidating as a single mining group and, in this way, improved our management structure in order to continue growing in Chile and abroad. Through consultation with our workers, we defined the Group's Charter of Values, a framework for action that should guide all our decisions, from the largest to the smallest. We also released our new corporate image this year.

In addition, 2014 was marked by decisions that tested our ability to be consistent with our Charter of Values. Both in the creation of Minera Centinela and in the announcement of the end of our operations at Michilla, we acted in accordance with our values, especially as relates to respecting our workforce and their families [ $\rightarrow$  see p. 9].

Amongst the things we are proud of is the inauguration of the El Arrayán wind farm, the biggest of its type in Chile, which will allow us to increase the share of renewable energy that Los Pelambres utilises to 20% of its total energy requirements. This is an important step in diversifying our energy matrix with clean sources and to mine in a sustainable manner, contributing to the management of climate change. We also achieved another year without having any incidents with significant environmental impact. We also made progress in the study and definition of new mining projects in order to increase production in the medium term. In this regard, in order to enable the construction and thus to be able to increase our contribution to Chile's development, we need to implement a new engagement programme with the communities [→ see p. 30].

In the first months of 2015 we experienced two conflicts at Los Pelambres. The first was due to a complex on-going legal case [ $\rightarrow$  see p. 3<sup>2</sup>]. The other, triggered by the severe drought affecting the country and which hit the Choapa Valley hard, was resolved by applying the principles which inspired our new community engagement approach [ $\rightarrow$  see p. 37].

I would like to thank our shareholders, employees and partners, their families, the local communities and authorities for the trust they have placed in us, as none of the progress made in 2014 would have been possible without their efforts and commitment.

In closing, let me reiterate the need to take care for our lives, both inside and outside of operations. Zero fatalities remains our main goal.

Milli

**Diego Hernández** CEO Antofagasta plc

# INTERVIEW WITH THE CHAIRMAN OF THE SUSTAINABILITY AND STAKEHOLDER MANAGEMENT COMMITTEE Ramón Jara

Ramón Jara has been a Director of Antofagasta Minerals since 2003 and is Chairman of the Sustainability and Stakeholder Management Committee. Mr. Jara also oversees the Fundación Minera Los Pelambres and is a Director of the Fundación Andrónico Luksic A.

#### Why did the Board of Directors of Antofagasta Minerals decide to form a Sustainability and Stakeholder Management Committee?

The Board of Directors has four committees at which fundamental business topics are discussed in greater depth than can be done by the Board as a whole. The Sustainability and Stakeholder Management Committee reflects the belief that social licence is a critical input for the business, increasingly difficult to achieve and to maintain. Stakeholders' expectations continue to increase and this is reflected in the legislation, standards and industry best practices. It is the Board's responsibility to understand these challenges and to evaluate Antofagasta's strategy to respond to them.

#### Who are the members of the Committee?

The Committee is made up of Directors with highly complementary visions and experience as regards to sustainability issues. Juan Claro understands the issues as an entrepreneur and business leader. Tim Baker brings experience as a senior mining executive in several countries. Vivianne Blanlot<sup>1</sup> was the first director of National Environmental Commission<sup>2</sup> and now chairs the Chilean chapter of Transparency International.<sup>3</sup> I bring insight from both my legal background and from my knowledge of the Company's history.

# What were the main topics the Committee considered in 2014?

- The decision to become members of the ICMM<sup>4</sup> and the commitment this entailes to be a leader in sustainable mining and report on our performance.
- Progress in the implementation of the health and safety model, as well as the lessons from the fatal accidents we suffered in 2014.
- Our progress in achieving social and environmental commitments.
- The social and environmental impact and opportunities of Los Pelambres' different growth alternatives.
- The fundamentals and progress of our new community engagement approach.

#### What will the priorities be in 2015?

The main focus is to guarantee the lives of those who work with us. The loss of five employees reveals that there is still much to do. The second priority is to strengthen our social licence in order to continue growing and improving the mining districts of Centinela and Los Pelambres.

- <sup>1</sup> Vivianne Blanlot replaced Tim Baker as a member of this Committee in October 2014.
- <sup>2</sup> At the beginning of 2010, this Commission's functions were taken over by the Ministry for the Environment.
- <sup>3</sup> Non-governmental organization dedicated to preventing corruption.
- <sup>4</sup> International Council on Mining and Metals.

# OUR OPERATIONS

Antofagasta Minerals

As of December 2014, Antofagasta Minerals S.A. operated three mining companies: Los Pelambres, Centinela and Michilla. Minera Antucoya, located in the municipality of María Elena, Antofagasta Region, will begin operating in mid-2015. As announced at the end of 2014, Michilla will cease operations in December 2015.





704,815 tonnes of copper



19,542 contractors<sup>2</sup>



LOCAL EMPLOYEES

57% of workers reside in the region where the mining company operates.



million

INVESTMENT IN THE COMMUNITY US\$ 31.1

SEAWATER

**44%** of all water consumed is sea water.



RENEWABLE ENERGY

5% of the energy consumed comes from renewable sources.

# About us

Antofagasta Minerals operates the Los Pelambres, Centinela and Michilla, mining companies, to which Minera Antucoya will be added in 2015 once construction is completed. Antofagasta Minerals is exploring and developing mining projects in Chile and other countries, and it also holds interests in energy assets in Chile.

Antofagasta Minerals is wholly owned by Antofagasta plc, 65% owned by the Luksic family, and listed on the London Stock Exchange. In 2014 the mining division generated 94% of Antofagasta plc's profits and this latter company also controls Ferrocarriles de Antofagasta (Antofagasta Railroad Company) which engages in cargo carriage; and Aguas Antofagasta, a water and sanitation company.

### Products

Copper cathodes and concentrate as well as the by-products of molybdenum, gold and silver.

# EBITDA (2014)

US\$ 2,077.8 million

# Revenue (2014)

US\$ 4,984.7 million

**By company:** Los Pelambres (53%), Centinela (40%), Michilla (7%).

**By product:** Copper (88%), gold (7%), molybdenum (4%), silver (1%).

- <sup>1</sup> Employed by the Group at its operations, projects, exploration and corporate centre, whether on permanent or fixed-term contracts.
- <sup>2</sup> This figure includes projects and operation employees from contractor companies.
  - Further information on the products, markets, processes and business statistics can be found at www.aminerals.cl/mineria-quienes-somos/que-hacemos/ and in the Antofagasta plc 2014 Annual Report, available at www.antofagasta.co.uk





# DISTRIBUTING VALUE

Economic value created by Antofagasta Minerals, measured as the balance between its revenues and operating costs, is distributed among its main stakeholders: workers, Government, shareholders, lenders and communities.



In 2014, Antofagasta Minerals generated an economic value of US\$2,614.5 million:<sup>1</sup> US\$2,387.8 million was distributed to our different stakeholders and US\$226.7 million was retained in the Company, mainly for reinvestment.

<sup>1</sup> The difference between revenue (sales, investment and other income) totaling US\$ 5,018.2 million and operating costs of US\$ 2,403.7 million.



/ Antofagasta Minerals

# BUSINESS STRATEGY

Antofagasta Minerals is a Chilean mining group that aims to be recognized worldwide for its high performance, sustainability and capacity to innovate in order to stay competitive in an increasingly complex world.

# Vision

We want to be recognized as a highly profitable Chilean-based copper and associated metals company with a global reputation as a prefered partner, both domestically and abroad.

We want to be known for:

- Our health and safety performance, and our sustainable policies regarding the environment and our stakeholders.
- Our highly productive exploration plan that has created a solid base of resources and reserves to build new projects.
- Our highly efficient existing Chilean operations and others under development, one outside of Chile.
- Our culture of excellence and fulfillment of our operating and development commitments and of our commitments to stakeholders.
- Our innovative model for community engagement, renewable energy sources, use of seawater and sustainability.
- Our exceptional management of labor relations and talent that has made us a preferred employer in Chile.

#### Strategy

To attain its vision, the Group has a business strategy in place based on strengthening its current operations and then, from these, leveraging growth.

### OBJECTIVE

3

**Core business** Optimize and improve existing operations.

#### Organic and sustainable growth of the core business Attain sustainable, organic development of the areas around the Group's existing asset base in Chile.

Growth beyond the core business Identify potential new growth in Chile and abroad, beyond existing operations.



Value communication campaign poster.

#### **OPERATIONS AND PROJECTS**

Los Pelambres, Centinela, Michilla and Antucoya.<sup>1</sup>

Centinela Mining District, Encuentro Oxides, an increase in processing capacity at Los Pelambres.

#### Chile: Antucoya, energy sector United States: Twin Metals

<sup>1</sup> Under construction; expected to begin operation in mid-2015.

#### A STRONGER GROUP IDENTITY

The great challenge to Chilean mining is to retain competitiveness in a setting characterized by the high price of energy and a more complex social environment.

Over the last two years, Antofagasta Minerals has worked hard on building up synergies without sacrificing the strengths of the companies comprising the Group.

Once that vision was brought up to date, Antofagasta Minerals invited all its workers to reflect upon the factors that contributed to the Company's success and to the new challenges it faces in an increasingly complex environment. As a result of this engagement process, the corporate Charter of Values was updated, which is the foundation of the leadership model and the employee performance evaluation system.

Further information on the business strategy, Charter of Values, guidelines and details of operations comprising the core business and projects can be found in the Antofagasta plc Annual Report 2014, available at www.antofagasta.co.uk and www.aminerals.cl/mineria-operations-yproyectos/

# MANAGING SUSTAINABILITY

Sustainability is an integral part of the decision-making process in each stage of Antofagasta Minerals' business life cycle. The Group has policies and a sustainability governance structure, implemented standards, management systems, identified risks and is working to ensure full compliance with its commitments.

#### World-class practices

In May 2014, Antofagasta Minerals became a member of the International Council on Mining and Metals (ICMM), which brings together the largest mining companies in the world. ICMM requires that its members abide by high standards of corporate governance, health and safety, environmental and stakeholder management. It also requires members to report their performance in those aspects according to the GRI' standards.

Antofagasta Minerals' application was reviewed by a panel of independent experts appointed by ICMM, who rated the Company's performance very positively. They also made recommendations that the Company has committed to implement by February 2016.

S More information at www.icmm.com



<sup>1</sup> Global Reporting Initiative.

#### **GUIDELINES AND STANDARDS**

Corporate values make up the foundation for decision making and business management [→ see p. 9]. Additionally, Antofagasta Minerals has embedded managerial policies, procedures and standards aligned with the best international practices established by the ICMM, the global benchmark in sustainable mining. It also uses social and environmental performance indicators that allow each company to set specific goals.

The safety, environmental, and social performance goals of each company are included in annual performance agreements between those companies and the corporate centre (which also include production, efficiency, and project progress goals). These agreements are reviewed twice a year during site visits by the executive team, led by the CEO. The goals of the companies are set out in the individual performance agreements of executives and professionals.

Management systems implemented by Los Pelambres and Centinela are certified according to ISO14001, ISO 9001 and OHSAS 18001. Meanwhile, Michilla is certified according to ISO 9001 and OHSAS 18001 and holds an environmental management system according to ISO 14001.



#### PERFORMANCE ASSESSMENT

Antofagasta Minerals uses a set of indicators to measure, evaluate and control its environmental and social performance.

Its Environmental Performance Evaluation matrix contains indicators structured around three areas:



The Social Performance Evaluation combines labour and social indicators associated with three key areas:



Each company sets environmental and social goals according to its priorities. These indicators are included in the performance agreements that each mining company makes with Antofagasta Minerals, and these are monitored through monthly operating performance reviews and monthly reports to the Board.



#### TOOLS FOR SUSTAINABLE MANAGEMENT OF THE MINING CYCLE

Antofagasta Minerals has been developing a set of tools –best practices, standards and indicators– to integrate the management of social and environmental considerations for each stage of the mining cycle, within the purview of the law and the pertinent international standards.



# SUSTAINABILITY GOVERNANCE

The Corporate Values, Code of Ethics and ICMM Principles guide the work and decision-making process at Antofagasta Minerals.

The Board is responsible for Antofagasta Minerals' long-term success. Its responsibilities include the strategic management of the Group, establishing policies and goals, and supervising economic, social and environmental performance, risks and internal control systems. The Board has four committees, one of which is the Sustainability and Stakeholder Management Committee.<sup>1</sup>

The Sustainability and Stakeholder Management Committee must review and deliver recommendations to the Board on policies, strategies, guidelines and goals in matters relating to sustainability, which include job health and safety, the environment, human rights, stakeholder engagement and society. The Committee supervises the Group's performance and impact in these matters; and reviews its compliance with internal procedures and the applicable national and international laws and regulations.

This Committee met four times in 2014. Its main activities were approving the new approach to engagement with communities [→ see p. 37] and the 2013 Sustainability Report, reviewing the status of compliance with environmental permits, updating mine closure plans, reviewing the socioenvironmental aspects of the projects to expand the operations of Los Pelambres and Centinela and reviewing the commitments made by the Group when it joined the ICMM.

Further information on the governance structure, responsibilities, role and composition of the Board and the Board's performance evaluation can be found in the Antofagasta plc 2014 Annual Report, p.74 available at www.antofagasta.co.uk



<sup>1</sup> The other three committees are: Audit and Risk, Nomination and Governance, and Remuneration and Talent Management.

#### RISK MANAGEMENT FRAMEWORK

Risks are managed on three levels:

# CORPORATE GOVERNANCE

Ensuring that the Group's vision, strategy and objectives are communicated throughout the organization, and that appropriate governance structures, policies and procedures are in place to embed those key aims and objectives.

# 

Ensuring that there are proper structures and processes in place to identify and evaluate risks, and that appropriate controls and mitigation techniques are developed to address those risks. Ensuring that risks and the performance in managing those risks, are reported on a timely basis to the relevant parties.

#### COMPLIANCE

Ensuring that the Group adheres to its internal policies, procedures, and control activities, as well as all relevant laws and regulations.

The Group has a methodology to identify any risks that may impede attaining the objectives of the business. Controls are established and responsibilities are assigned to prevent and/or mitigate them.

#### **RISK MANAGEMENT**

The risks of each company in the Group are identified and controlled through the Corporate Risk Management System. Each year, the executive teams review the risks involved in the key processes of the business at the different levels in the organization. These risks are evaluated by probability of occurrence and potential impact, and controls are defined for each, both preventive and mitigative. The risk management area tracks the status of these controls and interacts with the individuals responsible for implementing them.

Strategic risks and the status of their controls are reported regularly to the Board through the Audit and Risk Committee and, in matters within its purview, the Sustainability and Stakeholder Management Committee. The Board is ultimately responsible for deciding on the nature and scope of the material risks to the Group and for ensuring that the internal control systems are appropriate.

The general managers of each operation must lead and support risk management in their company, following the guidelines and orientation established at the corporate level. Workshops are held each year with the management teams of each company with the purpose of identifying and analysing strategic risks and reviewing how effective controls are.

The main risks pertaining to sustainability involve situations that, if they occur, could affect the relationship of the Antofagasta Minerals companies with local stakeholders and potentially jeopardize their good reputation and social license to do business and grow. The main risks include: incidents affecting safety, health or the environment, failing to identify and manage the community's expectations and concerns and a worsening of the water deficit.

#### Compliance

Antofagasta Minerals fulfils its legal obligations in Chile and the United Kingdom, as well as in other countries where it holds interests. In Chile, it pays particular attention to fulfilling the commitments set out in its environmental permits.

The Group identifies the social and environmental impacts of its operations, in order to prevent, mitigate or compensate them. It also abides by applicable laws, international standards and good practices.

The legal compliance of contractor companies is audited regularly, especially in regards to the enforcement of safety and labour standards (including minimum wage, collective bargaining, paid overtime and holidays). Child labour and forced labour are forbidden under Chilean law.

Antofagasta Minerals is aware that political events and legal reforms may affect its business and so it keeps tracks of proposed legislation and public policies. Its participates in public debate through trade unions.

In 2014, two environmental penalties were imposed on Minera Los Pelambres because of situations occurring in previous years [ $\rightarrow$  see p. 38].

Further information on risk management, responsibilities, focuses in 2014 and a description of the main risks and mitigative measures can be found on pages 33 to 37 of the Antofagasta plc 2014 Annual Report.

#### ETHICS, TRANSPARENCY AND HUMAN RIGHTS

The Code of Ethics is a set of principles and conducts that serves as a guide to the Company's Directors, executives, and employees, both our own and of contractor companies. It sets out the rules and regulates the way in which the company's representatives should engage with shareholders, workers, authorities, communities, customers, suppliers and partners. It addresses matters involving conflicts of interest, corruption and bribery, use of information, protection of working conditions, prevention of discrimination and harassment, human rights and respect for neighbouring communities and their traditions, customs and culture.

#### **Preventing bad practices**

In order to reduce risks of corruption and bribery, we have a Corporate Crime Prevention Manual warning warns employees and contractors about potential conflicts of interest. Internal regulation adheres to the UK Bribery Act and the Chilean anti-corruption law (Law 20,393). The Code of Ethics and Crime Prevention Manual are included in the induction course for employees joining the Company. The most exposed areas and individuals receive regular training and a Group-wide e-learning course is held every two years. The Group has also developed specific guidelines to regulate gifts and visits and forbid the payment of facilitation fees. The Group has set up a reporting channel on the website, intranet and a dedicated phone line so that anyone can report an irregularity anonymously. The Ethics Committee is tasked with investigating these reports, supervised by the Board's Audit and Risk Committee. No reports were received in 2014 on situations of discrimination, abuse of human rights or corruption.

The Group has also set communication channels for the use of workers and communities so they can voice their concerns regarding the operations, make known their grievances and report irregularities.

#### **Indigenous Peoples**

The Group is respectful of the human rights of its stakeholders and requires the same of its employees and contractors. Its priority is to safeguard the job and safety conditions of workers, respect for communities and the environment.

Antofagasta Minerals has no operations affecting indigenous peoples. It has only had rather limited contact with indigenous groups at some of its explorations agrees. On such occasions the Company has been able to establish relations based on good faith, mutual respect and the fulfilment of its commitments.

The Group is developing a specific guide on engaging with indigenous peoples, in line with the ILO Convention 169 and the regulations on its enforcement in Chile, as well as the ICMM's recommendations on this matter.

# ANTOFAGASTA'S MATERIAL sustainability issues

For each material issue, we explain: why its relevant to this particular Company; its regulatory framework and management approach; and the main aspects of our performance in the past year.

# MEETING GOALS

Our performance in achieving the main sustainable management goals of the business and how to keep moving forward.

2014 GOALS	PERFORMANCE	2015 CHALLENGES			
Zero fatalities.	Not achieved Five workers lost their lives in three fatal accidents in 2014 [→ see p. 22].	No fatal accidents.			
Become an ICMM member. <sup>1</sup>	Achieved Antofagasta Minerals was admitted as a member of the ICMM in May 2014.	Implement the plans to close the gaps identified during the ICMM affiliation process by February 2016 [ $\rightarrow$ see p. 10].			
Deveolp a new Charter of Values.	Achieved After a participatory process to update the Group's values, they were launched in March 2014 [→ see p. 9].	Strengthen leadership skills on the basis of the Group's values.			
Implement the new safety and health model.	Achieved Critical health and safety risks to workers and contractors were identified.	Reduce the number and severity of accidents.			
No operating incidents with significant environmental impact.	Achieved We had no incidents with significant environmental impact.	No operating incidents with significant environmental impact.			

<sup>1</sup> International Council on Mining and Metals (ICMM).



00% compliance with commitments in environmental permits RCA <sup>2</sup> ) and to communities.	Ľ	Partially achieved Most of the plans to close gaps were implemented, but some commitments are still pending [→ see p. 38].	100% compliance with commitments in RCAs and to communities.
mplement "Somos Choapa", approach to engaging with the community and other stakeholders in Los Pelambres' region [→ see p. 37].	Ľ	Partially achieved The first stage was implemented in Illapel and Canela. Salamanca and Los Vilos are next [→ see p. 37].	Complete the implementation of "Somos Choapa" and begin to measure the effectiveness of our contribution to loca development.
Design and implement an engagement plan with the city of Antofagasta.	Ľ	<b>Achieved</b> We committed funding to a public- private initiative to build the city's first bicycle lane.	Contribute to initiatives that improve the quality of life in Antofagasta and strengthen the Group's local reputation.
			Implement the activities planned for Michilla's closure in compliance with ou commitments and under a high standard of safety [-> see p. 48].
			Fulfil the commitments asigned to Minera Los Pelambres in the Salamanca Agreement [→ see p. 34].



# BUILDING TRUST AND SHARED DEVELOPMENT

Stakeholders have expectations and concerns regarding the Group's activities. We are developing a greater capacity to listen to our stakeholders and together develop solutions to their concerns. This will increase value for the company, for Chile, for the communities and other stakeholders.



Antofagasta Minerals' main stakeholders are it shareholders, workers and contractors, neighbouring, communities, central and local government, clients and suppliers. They are kept informed through: production and financial result reports, company websites, Annual Reports, Sustainability Reports, reports on climate change and water sent to the CDP<sup>1</sup>, meetings, presentations, studies and site visits.

Each year the Group conducts a survey among workers, contractors, local government and communities to assess their perceptions about the Company. Other listening opportunities are: formal community discussions, open days, participatory monitoring and the grievances mechanism. There are numerous ways in which the Company listens to its workers such as the annual climate survey, the performance management system and collective bargaining.

#### PUBLIC PRESENCE

Antofagasta Minerals is an active member of the two Chilean mining trade organizations: The Mining Council and National Mining Association. It is also a member of the National Innovation and Competitiveness Committee and Action Foundation<sup>2</sup>. Internationally, it is a member of the International Council on Mining and Metals (ICMM), the International Copper Association (ICA) and the International Molybdenum Association (IMOA), among others.

Regionally, the mining companies are members of different initiatives and organizations. In the Antofagasta Region we are involved in: Asociación de Industriales de Antofagasta y de Mejillones; Mesa de la Minería; Mesa de Género de la Integración de la Mujer en la Minería; Creo Antofagasta; Corporación de Desarrollo del Loa; Nuestro Norte; Región Fértil; Universidad Católica del Norte; Universidad de Antofagasta; Fundación Gaviotín Chico; and Equipo de Buenos Vecinos de Sierra Gorda, among others.

In the Coquimbo Region, we are involved in: Corporación Industrial para el Desarrollo Regional de Coquimbo (Cidere), Agencia Regional para el Desarrollo Productivo, Consejo Regional Minero Corminco, Junta de Vigilancia del Río Choapa, and in canal user and potable water associations, to name a few. We have also collaborated with the Universidad de La Serena.

<sup>1</sup> The Carbon Disclosure Project is an international leading organisation in monitoring and reporting companies' carbon footprint and water consumption.

<sup>2</sup> Former Accion RSE (Corporate Social Responsibility Action). See more at www.accionrse.cl.



The life and health of the people who work for Antofagasta Minerals is a non-negotiable priority, reflected in our values and strategic objectives. Our systems and processes are designed to prevent situations that could harm our workers, contractors, neighbours or the environment.



Our goal is to eradicate accidents resulting in death. To that end, Antofagasta Minerals reinforced its corporate safety team, updated its policy and introduced a new preventive management model that focuses on the activities with greatest risk of causing fatal accidents.

The cornerstones of the new approach are:

- ➔ Identifying high-potential risks early on;
- ➔ Reporting high-potential near-accidents;
- ➔ Leadership.

The Group bases its safety management on OHSAS 18001 and the international best practices promoted by the ICMM. The standards, procedures and teams are the "hard" barriers, but behaving safely is a daily effort that requires a level of awareness and personal commitment by each worker that take many years to fully adapt. For that reason, a strong communications campaign was launched in 2014 to emphasise selfcare and each person's responsibility for preventing accidents.

Safety managers report to their operation's General Manager, who in turn reports twice a month to the Vice-President of Operations and monthly to the Board. The safety results are tied to the performance bonuses received by executives and employees.

#### FOCUSING ON PREVENTION

Despite all efforts, we are sorry to report the deaths of five people during 2014 in three separate accidents. In January, a contractor lost his life working on a pipeline at Centinela. In September, a Los Pelambres worker died when the truck she was driving went off a precipice. In October, three workers of Enaex died after their pickup overturned on the road to the Centinela pit [ $\rightarrow$  see p. 25]. Among other measures, the Company implemented a specific standard on driving vehicles that included new requirements on instruments and practices to control speed and be aware of fatigue.

A record of the five most critical risks was completed in 2014 for each of the operational units of each Company, including controls and individuals responsible. Everyone is now required to report high-potential near-accidents, which is a preventive management tool. A powerful communications campaign was implemented to foster safer on-the-job behaviour and practices, led by the CEO and senior executives in the Group, who visited the sites on several occasions for the sole purpose of promoting safe conduct.

In the latter part of the year, approximately 700 contractors were evaluated to identify those most exposed to high-potential risks in their activities or whose safety performance needed reinforcement. One-third were placed on a priority list to give them additional technical support in order to ensure that the corporate safety model is fully implemented. Internal audit verifies that the contractors are complying with the health and safety risk management model. The traditional safety ratios, the AIFR<sup>1</sup> and LTIFR<sup>2</sup> are reactive figures because they show past performance. Starting in 2014, the Group also began monitoring the number of high-potential accidents reported as compared to total accidents. This indicator will help evaluate the quality of preventive management. The 2014 AIFR rose 26% compared to the previous year because lost-time accidents increased from 43 (2013) to 54 (2014). The reason for this was the significant increase in staff to build Antucoya. It is important to highlight that 88% of these accidents had a low-risk potential. The LTIFR remained stable.

	All Injury Frequency		Lost Time Injury Frequency		Number of				
	Rate (AIFR)		Rate (LTIFR)		Fatalities				
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Antofagasta Minerals¹	5.4	3.9	5.0	1.3	1.1	1.1	1	2	5
Chilean mining industry²	n/a	n/a	n/a	2.9	2.1	n/a	25	25	n/a

<sup>1</sup> Data covers the sum total of the company's own workers and those of contractor companies at Los Pelambres, Centinela and Michilla operations, Antucoya project, and those involved in explorations.

<sup>2</sup> Source: Chile's national mining agency (Sernageomin).

n/a Not available.



<sup>1</sup> All Injury Frequency Rate: Number of accidents with and without lost time during the year per million hours worked.

<sup>2</sup> Lost Time Injury Frequency Rate: Number of accidents with lost time during the year per million hours worked.

#### **OPERATIONAL HEALTH**

In 2014, the Group undertook an exercise to asses the overall health of its employees and contractors and determine an acceptable health baseline. This study identified six factors at the workplace that had the potential to cause illness resulting in death or partial incapacityin case of prolonged exposure to them. These factors are: silica dust, sulphuric acid mist, ionic radiation, solar radiation, altitude and noise. This baseline will be the foundation for preventing and monitoring the effects of these agents in order to reinforce preventive conduct and improve controls.

All operations invest continuously in improving infrastructure and the availability of services at camps. They have set up programmes on healthy living, a healthy diet and high-quality sports facilities for both workers and contractors.

# **5** people

died at our operations as a result of 3 accidents in 2014.



Attain zero fatalities and continue to reduce the number and severity of accidents.



#### THE FIVE LIVES WE LOST IN 2014

# P

The Antofagasta Group mourned three fatal accidents in 2014, where we lost five of our colleagues in the most tragic and unacceptable circumstances. Apart from the causes, today five families are torn by the loss of their loved ones.

The best way to handle that pain is to reiterate our conviction that nothing, no goal of any kind, justifies endangering lives. To deepen the implementation of the health and safety model focused on the early identification of risks and control of the causes, together with a standard process for reporting and investigating high-potential incidents [ $\rightarrow$  see p. 22].

March 5th at 22:15 hrs. Johnny Lara Colman, who worked for Tecnasic, one of our contractor companies, was helping install a bypass of the brine piping beside the Centinela concentrator plant, when he was suddenly struck by a high-pressure jet of water. He died a few hours later.

Johnny was 43 years old, married and the father of five children.

Interlocks (automatic pressure regulators) were installed after this accident on the valves and pumps of the plant, and drills were conducted to reinforce the lockout procedures in all of Antofagasta Minerals' operations.

September 6th, at 02:05 hrs. Elena Ávila Zepeda, at Los Pelambres, lost control of the truck she was driving, and went over a precipice.

Born and raised in the neighbouring town of Cuncumén, Elena was 25 years old and had a 6-yearold daughter. She had recently joined the company as part of an apprenticeship programme. The apprenticeship programmes were put on hold during the investigation of the causes behind the accident, in order to do a detailed review of the programmes' standards and requirements. Devices were also installed to control fatigue in truck and other equipment operators.

October 4th at 08:08 hrs. Three workers of Enaex, one of our contractor companies, died when the pickup truck that was carrying them to their work location overturned on the ramp to the Esperanza Pit of Minera Centinela. Franco Veas Vergara was from La Serena and had been working for Enaex for 4 years. He left behind a 2-year-old daughter. Juan Varas Tapia was 30 years old and had been an employee of Enaex for 3 years. He had two children, aged 10 and 5. Ramón Segovia Muñoz was 36 years old and an Ovalle native.

After this accident, the Company implemented additional standards on the equipment required on pickups operated on site and reinforced the requirements on driving inside pits, among other measures.

Our sincerest condolences go to the family, friends and colleagues of Johnny, Elena, Franco, Juan and Ramón. We promise to make our utmost efforts not to lose one single life from now on in any of the Antofagasta Minerals companies.

### Workers BEING A **PREFERRED EMPLOYER**

Overcoming the challenges of the organization requires the commitment of all who comprise it, based on shared values, a clear business vision and an attractive employee value proposal that, combined will make Antofagasta Minerals a preferred employer.



Attaining the Group's ambitious vision means a high level of performance. The human resources strategy aims to help materialize this vision by means of:

- An organizational model that develops the abilities to address the challenges entailed in the business strategy [→ see p. 8].
- Succession plans to enure that talent is available.
- Promotion of corporate values.
- Consistent administration of critical human resources processes.

# 28%

of total job openings were filled through internal recruitment.

#### **EMPLOYEE VALUE PROPOSAL**

During 2014, Antofagasta Minerals dedicated significant effort to strengthening the Group's culture by building synergies and sharing lessons. It developed a set of initiatives based on the Charter of Values [→ see p. 9] that provides a consistent guide to key processes, such as performance management and leader development. It also improved internal communications management by reinforcing the team, creating new media and deploying specific plans in support of the main initiatives.

Leveraging the Group's competitiveness requires developing its employees and preparing them for new challenges. It also means attracting new talent. In 2014, each employee received an average of 4.5 hours of training monthly, and the working climate survey was expanded by adding the measurement of the workers' commitment to the company and their intention of staying in it. This information will help improve the value proposal that the Company makes to its employees.

A performance management system was implemented in 2014 which emphasizes individual performance, meritocracy and leadership competencies. This system strengthens the alignment of the Group's objectives to the individual goals of each employee and fosters internal mobility. A corporate model was defined to manage talent and succession plans for key positions, including the centralized administration of vacancies. A programme was also devised to develop value-based leadership skills of individuals in managerial positions. The Group has set up a programme to recruit young professionals with the potential to become future leaders and train them through internships. Since this initiative was launched in 2010, 114 young professionals have joined the programme, 25% of whom are women.

Gender diversity continues to be a challenge in many sectors of the Chilean economy, including mining. In 2014, women accounted for 10% of our own workers and 33% of them held a supervisory position. Although Antofagasta Minerals employs more women than the national average of 7.4%<sup>1</sup> for mining, much still remains to be done. In March 2014, Vivianne Blanlot joined the Antofagasta Minerals Board of Directors, becoming the first female Director in the Group's history.

#### LABOUR RELATIONS

The Group is known for maintaining good relations with its workers and unions, grounded on trust, ongoing dialogue and good working conditions. There has never been a strike.

In 2014, the labour force totalled 24,225 individuals comprised of own and contractors' workers, an increase compared to 18,652 in 2013. The 30% increase was mainly due to the contractors retained to build the Minera Antucoya project.

There are 8 unions in the Group: 4 in Centinela, 2 in Los Pelambres, 1 in Michilla and 1 in Antucoya. 55% of our own employees are unionized. The collective agreements at Los Pelambres, Centinela-Concentrates and Michilla expired in 2014 and all were renewed after successful collective negotiation. These collective agreements cover 62% of our total direct workforce<sup>2</sup>. The Michilla agreement contains severance terms for its workers since it was negotiated right after the public announcement that operations would cease in December 2015.

Workers can express their concerns directly to their supervisors, to their unions representatives or using the dedicated phone line where unethical behaviour can be reported.



#### Total workforce

The annual average of direct workers and indirect contractors workers

# 2015 Challenge

Strengthen Antofagasta Minerals organizational culture by developing leadership based on the corporate values.

<sup>&</sup>lt;sup>1</sup> Sernageomin 2013.

<sup>&</sup>lt;sup>2</sup> The collective agreement does not include supervisors and managers.

# Suppliers and contractors OUR STRATEGIC **PARTNERS**

The Group works with over 5,500<sup>1</sup> suppliers of goods and services, and contractor account for 81% of the Antofagasta Minerals workforce. The challenge lies in working with common standards, while maintaining a mutually beneficial relationship that leverages the business' competitiveness.

# Our Approach

Large-scale mining in Chile has commonly subcontracted specialty services in areas ancillary to the core business. As a principle, the Group endeavours to build stable relations with suppliers and contractors who share its priorities, values and standards. It requires its service contractors to maintain minimum standards concerning their workers, which include: safety and health conditions; a minimum salary above the legal wage; compliance with social security laws; benefits such as life and health insurance; and scholarships.

These requirements are set out in the contractual conditions and are audited periodically.

#### INNOVATION AND COMPETITIVENESS

Contractors represented 81% of the Group's total workforce in 2014. Of that number, 44% worked for operating contractors that provide services that support our mining activities, such as maintenance, transportation and meals. The others are project contractors, working temporarily on the construction of expansions or new facilities, so this figure will vary from one year to the next, depending on the magnitude of the work under way.

At the end of 2013, the Group created a corporate procurement division to define general guidelines and provide technical assistance to contract administrators. An administrative record of suppliers was created in 2014 and a corporate model on contract administration was embedded that standarized requirements and procedures between operations. This process was led by the Procurement division. Health and Safety, Human Resources, and Environmental areas actively participated in this process as well.

In December 2014, Antofagasta Minerals signed an agreement with the Asociación de Proveedores Industriales de la Minería (Aprimin<sup>2</sup>), to standardize aspects such as: safety induction plans; physical examinations and examinations to enter sites; and light vehicle standards. This type of initiative is of benefit to all because it creates efficiencies and reduces costs without affecting the quality of the processes or the safety of people.

<sup>&</sup>lt;sup>1</sup> This number includes the suppliers of Minera Los Pelambres, Minera Centinela and the corporate centre.

<sup>&</sup>lt;sup>2</sup> Industrial Mine Suppliers Association, Aprimin in Spanish.



# 2015 Challenge

Implement a service model that is systematic, transparent and reliable. This will support cost control and improve productivity.

## Community SHARED VISION AND SUSTAINABLE DEVELOPMENT

Antofagasta is innovating in its community engagement approach. We want be a more active contributor to the sustainable development of the territories where we do business, based on a long-term vision built with the main stakeholders and in close collaboration with the public sector.

# Our Approach

Managing our operations sustainably requires preventing and mitigating the risks and impacts throughout the mining cycle: from the project evaluation stage to the closing of the operation. It also requires fulfilling all our commitments: those demanded in the environmental qualification resolutions and the ones voluntarily agreed with the communities.

In order to maintain and expand our social licence to operate and grow, our activities must tangibly contribute to the sustainable development of the territories where we do business.

Our policies and practices are aligned to the ICMM principles. Those most relevant to community engagement are: health and safety, respect for human rights, dialogue and a contribution to local development.





Participatory water monitoring at Caimanes.

#### NEW DIALOGUE CAPACITY

The operations have set up several channels of dialogue with communities and the main stakeholders –task forces, participatory monitoring and site visits, among others– and a formal system to investigate and respond to claims made by the communities. Antofagasta Minerals uses a commitment register to follow-up on its commitments, and has a grievance procedure in place. In 2014, 87% of the commitments and 34% of the complaints were handled on time. The majority of the 44 complaints were made by local entrepreneurs concerned about delayed invoice payment by contractors or subcontractors of the Group's mining companies.

The agreement reached by Minera Los Pelambres and communities on the design and implementation of the closing of the Quillayes dam is a good example of the Group's new engagement model, reflected in the Somos Choapa initiative [→ see p. 37]. After extensive dialogue between the community and Los Pelambrest technical team, a partial closure plan was agreed in 2008 that included phytostabilization for a section of the dam.

The initiative, which will take several years to complete, has engaged the community in the design and implementation of the plan that included the creation of a plant nursery managed by locals.

To this day, pilot testing is underway to determine the most appropriate vegetation. This solution would not have been possible without engagement between the community and the Company. The dialogue process allowed locals to understand the Company's legal and technical obligations in implementing the closure. And, Los Pelambres had the opportunity to gain a better understanding of its neighbours' concerns regarding dam safety, prevention of contamination and impact on the landscape.

#### IMPACTS AND CONFLICT MANAGEMENT

Mining projects' potential risks and socioenvironmental impacts are identified at an early stage. Measures for their prevention, mitigation and compensation are integrated into the Environmental ImpactAssessment and become part of constructing permits. During the operation stage, social impacts are mainly associated to road safety and ensuring air quality.

Between November 2014 and March 2015, Minera Los Pelambres experienced two successive social crises, with different causes. Neither had collective support from the communities, despite rather intense media coverage.

#### **CAIMANES – EL MAURO DAM**

Caimanes is a community of 1,200 inhabitants, located approximate 13 km from the El Mauro tailings dam, where Los Pelambres is authorized to deposit mineral waste from its operations [ $\rightarrow$  see p. 50]. Since 2008, a group of locals, led by lawyers, has been opposing the dam's operation in court. This group has made allegations including that the dam does not adequately comply with safety standards, that it would pollute water or that it would leave Caimanes community without water.

In October 2014, the Supreme Court ruled in the plaintiffs' favour and ordered Los Pelambres to "let the water from the Pupío stream flow naturally to Caimanes, uncontaminated by waste coming from El Mauro tailings dam." The Court ordered Los Pelambres "to present the district court, within a month, a plan for implementation of works that fulfils this purpose, which may consist of demolishing or removing all or part of the new works identified in the case –the containment wall of such dam that hinders and disturbs the enjoyment of water by the inhabitants of the town of

## Caimanes or of other works that are central or complementary to the above."<sup>2</sup>

A few days after the ruling was rendered, a group of the plaintiffs blocked the road to the dam, demanding that Los Pelambres comply with the Supreme Court's order. After 57 days, during which an average of 20 people participated in the blockade, the police had to intervene to clear up the road. In the meantime, Los Pelambres had presented the work plan to Los Vilos District Court, thus complying with the Supreme Court's ruling.

On March 6, 2015, the Los Vilos District Court rejected the work plan submitted by Los Pelambres and ordered the demolition of the dam's containment wall, arguing no plan could guarantee the water's natural flow. The Company has appealed this decision on the grounds that the works plan it presented does in fact fulfil the Supreme Court's ruling and that:

Demolition of the dam's wall would allow tailings to flow into the valley below, contaminating the water reaching Caimanes and causing environmental damage in the entire area. It is impossible to – simultaneously– meet both conditions of the Supreme Court ruling: "...let the water from the Pupio Stream flow naturally to Caimanes"<sup>3</sup>, yet ensure that this water be "free of contamination from waste from the El Mauro tailings dam.<sup>4</sup>"

The dam's construction was authorized after its environmental impact study has been approved in an environmental assessment process in accordance with Chilean law. The dam operation complies with the standards set out in its environmental approval and specific permits, and it will continue to do so.

- <sup>3</sup> Ídem.
- 4 Ídem.

<sup>&</sup>lt;sup>1</sup> Source: Free translation of Chile's Supreme Court ruling in Case 12938-2013, the lawsuit brought against Los Pelambres *por obra nueva* (new works) rendered in October 2014.

² Ídem.

#### CHOAPA PROVINCE, COQUIMBO REGION



This fact has been acknowledged in successive court rulings and continues to be verified in a monthly oversight by the National Water Agency. Therefore, this ruling contradicts the decisions of the competent government agencies and creates legal uncertainty.

Regardless of the pluviometric conditions, Mauro dam's operating permits force Minera Los Pelambres to deliver water continuously to the Pupío stream at the discharge point located around 10 km from Caimanes.

The Pupio stream's water volume is dependent on rainfall. After several years of drought, its flow has been severely reduced. Local drought and the dryness of the land in recent years has caused almost all the stream's water to be absorbed into the ground before reaching the town of Caimanes [→ see p. 52 and 53].
If the wall were to be demolished, Minera Los Pelambres would be forced to shut down as it could not continue operating without a tailings facility. In 2014, Los Pelambres produced 390,000 tonnes of copper and 7,900 tonnes of molybdenum. It created approximately 12,000 jobs, direct and indirect positions, and paid US\$ 290 million in taxes.

In regards to claims that the dam affects the quantity or the quality of water in Caimanes, it is important to clarify that:

- The water in Caimanes is sourced from 4 wells managed by the Caimanes Rural Drinking Water Association, not from the Pupío stream. These wells have the capacity to produce three times the amount of water required by a town the size of Caimanes (as based on recommendations of the World Health Organization).
- The Water Agency and the Health Service both monitor water quantity and quality monthly, both at the Pupío stream and in the Caimanes wells. In addition, joint participatory monitoring by the community, the competent technical institutes and Los Pelambres has been on-going since the end of 2012. The samples are analyzed by two certified laboratories that have yet to find any contamination in the quantity or quality of water.

Nonetheless, the company recognizes that this dispute has harmed its relations with the community and caused division among local inhabitants. It also recognizes that it has lacked the ability to build a better relationship with Caimanes. Going forward, we intend to do things differently: while legal matters must continue their course before the courts, we will no longer subordinate our community relations to the legal actions filed by a few. We want to trigger a discussion to build a shared vision for the Choapa province's sustainable development together with local authorities and inhabitants. This is the aim of our new Somos Choapa framework for community engagement within a territory  $[\rightarrow see p. 37]$ .

#### SALAMANCA CONFLICT AND AGREEMENT

Given the serious drought prevalent in the Choapa Valley and in the nation as a whole, in February 2015, Salamanca inhabitants blocked the road to the mine to demand that Los Pelambres immediately build a desalination plant and stop using its water rights in the Choapa River.

This crisis was overcome through a multipleparticipant round table, comprised of municipal officers and representatives of the community, water user organizations, the central government, local congressmen and Los Pelambres. This dialogue allowed for an agreement that addressed the substance of the issue, that is how to face the effects of the prolonged drought in the zone. The Salamanca Agreement sets out each participant's responsibilities. Los Pelambres promised to collaborate with the government in the search for long-term solutions and funding a portfolio of specific projects in this aim.

This manner of addressing a conflict is an example of the new engagement model adopted by Los Pelambres. The Company is taking a more proactive role in promoting local development, in alliance with the government, other local stakeholders and the active involvement of different groups within the communities. The view is long-term, grounded on an integrated vision of the opportunities and challenges within the Choapa province.

#### WORKING TOGETHER TO IMPROVE THE QUALITY OF LIFE IN SIERRA GORDA



There are just 5,000 inhabitants in the municipality of Sierra Gorda, living in two towns: Sierra Gorda and Baquedano, 74 km apart, in the middle of the desert. For decades, these towns suffered without a constant supply of quality potable water, aggravated by the obsolescence of the waste water treatment plants. Yet it was difficult for the Government to justify the investment required to install a potable water and sewerage system for such a small community.

A potable water supply and waste water treatment system was installed in both localities in this municipality thanks to the initiative of the mayor, the commitment of local sanitary company, Aguas Antofagasta, and the support of the three mining companies operating in the area. This project was key to the municipal development plan.

The project cost a total of US\$ 9 million and consisted of two waste water treatment plants and two water towers, one in Baquedano and one in Sierra Gorda. The Group contributed US\$ 3 million through Minera Centinela.

These works were inaugurated on December 16, 2014 in the presence of local inhabitants and various

authorities, including the Minister of Mining and the Intendant of Antofagasta. At the ceremony, Diego Hernández, CEO of Antofagasta plc, explained that the mining group plans to remain in the area where Minera Centinela currently operates for another 50 years or more. It will build the Encuentro Oxides project and is about to submit another project to the Environmental Impact Assessment system.

We believe that our mining development must be compatable with the territories and communities that welcome us. For that reason, this work includes constitutions to Sierra Gorda and aims to improve the local inhabitants' quality of life.



#### CONTRIBUTION TO ECONOMIC DEVELOPMENT

The Group's operations are an engine for local development that creates jobs and entrepreneurship, pays taxes and passes on knowledge. They also support the development of nearby communities with the aim of improving the quality of life and development opportunities (employment, training and entrepreneurship).

In 2014, the Group allocated US\$ 31.1 million to community investment projects, realized through its companies and the Fundación Minera Los Pelambres. More than 200 projects were implemented.

At the end of 2014, Minera Los Pelambres devised an ambitious employability plan in close collaboration with the municipalities of Choapa and the Chilean Government with the objective of reducing the actual gap between job expectations and local capacities. This plan addressed three areas: skill development (mining and non-mining); the articulation of job supply and demand; and support to entrepreneurship. The Group also participated in the Mining Council<sup>1</sup> initiatives to improve the skills of the industry's workers. In their project stage, mining companies provide apprenticeship programmes to attract, train and ultimately hire mining operators and plant maintenance technicians from the municipalities in their area of influence.

In support of local suppliers, Minera Los Pelambres helped facilitate their upgrade to e-invoicing in partnership with the Chilean goverment. Minera Centinela received the ProPyme Seal (pro small and mid-sized businesses) of the Ministry of Economy, which certifies large companies that pay their small and mid-sized suppliers within a maximum of 30 calendar days. Los Pelambres and Centinela are also participants in the national programme to develop world-class mining suppliers.

In 2014, Los Pelambres continued to provide technical support to small farmers, including in fields such as irrigation.

Los Pelambres also continued fostering production initiatives with small farmer in the Choapa Valley and artisanal fishermen in Los Vilos.

The Group's companies fund higher education scholarships for the top graduates of local schools. They also support several programmes to improve the quality of education, in particular: certification of teaching and administrative quality, dissemination of scientific knowledge, fostering expressive abilities and job preparation.

#### QUALITY OF LIFE

Antofagasta Minerals is developing projects that aim to improve the quality of life and the wellbeing of the local community. The most important projects in 2014 were: the construction of the Alto Choapa Primary Health Care Centre and the new potable water and sewerage system for Sierra Gorda and Baquedano. Both will be run by public agencies.

In 2015 the first Primary Health Care Centre of Alto Choapa will be completed, with an investment of 1,400 million Chilean pesos, funded by Los Pelambres. Also, the execution of the first works committed with the Somos Choapa framework will begin [ $\rightarrow$  see p. 37].

The Antofagasta en Bicicleta programme will also begin in 2015 aiming at the construction of a coastal walk including that city's first bicycle path, a contribution by Antofagasta Minerals to the CREO Antofagasta master plan.<sup>2</sup>



Progress the implementation of the new engagement model and design of tools to make community investment more effective.

<sup>&</sup>lt;sup>1</sup> Chilean mining trade organization. www.consejominero.cl

<sup>&</sup>lt;sup>2</sup> A public-private platform that is proposing a master plan for the sustainable urban growth of Antofagasta by 2035.

### SOMOS CHOAPA: A NEW APPROACH

## **From community investment** to development of the territory

Antofagasta's mining companies have always maintained good relations with local communities, authorities and organizations. Traditionally, we have tended to establish bilateral, rather transactional, relations with each community and dialogues that aim to resolve the specific concerns of each stakeholder. Yet this approach was not enough to face the challenges of coexistence between a largescale mining company and the communities in the 21st century. We felt we needed a more formal and proactive approach regarding a territory in which diverse actors and productive ambitions co-exist. The challenge lay in rethinking a mining company's contribution to local development in the long term.

Minera Los Pelambres is pioneering a new approach, called Somos Choapa. The process began in 2014 in the municipality of Illapel, with a collaboration agreement between the mining company and the municipality. After a town meeting, convened by city hall and widely attended by locals, a common vision for the sustainable development of Illapel was decided. In the weeks thereafter, several forums were held -also open, but smaller- to discuss specific matters relating to the opportunities and impacts of mining in the region This information was used to define a portfolio of projects and initiatives to be developed over the coming years. Minera Los Pelambres hired a top technical firm to assist municipal teams in the design and funding for these projects. Given the size and complexity of the project portfolio, it will take time to materialize these projects and significant joint work by the public and private sectors. This is a new and complex process, but we are convinced that it will make the sustainable development of regions compatible with the growth of our operations.

Under the new approach to sustainable regional investment, the Company will:

- Contribute to the development of the region in which it does business, in alliance with the State, the local government, local NGOs, local companies and other stakeholders.
- Foster dialogue –as inclusively as possible– to proactively identify the impact and opportunities associated with mining and build a shared vision of sustainable local development.
- Participate in alliances with the Government and other stakeholders to fund a medium-term project portfolio that will materialize the envisioned local development.
- Contribute to strengthening the capacities and social capital of local stakeholders.

#### M 0 0



Una nutrida agenda ha tenido desde inauguración la Casa Abierta de "SOMOS CHOAPA, Provincia Sustentable", lugar en el cual la comunidad, agrupaciones sociales y mesas de trabajo, han podido llevar a cabo una serie de reuniones con el equipo de participación ciudadana del proyecto, on el objetivo de construir de no conjunto con la comunidad, la VISIÓN de la comuna que permita guiar el diálogo para la co-construcción y diseño de unamortet de nortes nde encortes per la ciudatrico de distrutor de la comunidad. la propuesta de cartera de provectos para la ciudad.



Esto con la finalidad de que el equipo del plan pueda a tra Esto con la initiativa de que el equipo der pian pueda a traves de un diagnóstico participativo, establecer un marco de acción en torno a las principales necesidades de la comuna para dar a conocer en un "cabildo abierto" a la comunidad, el camino a seguir para el diseño de programas y proyectos que Illapel necesita. Para cumplir con lo anterior, es que en las próximas semanas se mantendrán nuevos encuentros con diversos actores de la comuna.

Las reuniones se llevan a cabo en la Casa Abierta del plan "SOMOS CHOAPA, Provincia Sustentable", la cual busca ser el punto de encuentro y diálogo de todos los actores de la comuna que se van incorporando al proceso participativo del proyecto.



## Environmental management BEING ENVIRONMENTALLY **RESPONSIBLE**

Concern for the environment is a matter of growing public interest. Mining has major impacts on landscape and natural resources and thus regulation is increasing. We work to prevent environmental risks and impacts and if that is not possible, to mitigate or compensate for them appropriately.

## Our Approach

The environmental management of the Group is regulated by the Environmental Framework Law and the specific mining regulations, the ICMM<sup>1</sup> principles, international best practices and ISO 14001.

During 2014, the Group adapted its environmental strategy to focus on:

- Assuring operational continuity by safeguarding compliance with environmental commitments and control risks.
- Activating growth projects by identifying early on environmental aspects to be taken into account and ensuring high quality of the environmental impact studies presented for approval by the authority.

# **O** operating incidents

zero operating incidents with significant environmental impact since 2011.

The Group currently has specific guidelines in place on managing water, air, climate change, biodiversity, cultural heritage, land and waste.

Following ICMM<sup>1</sup> recommendations, corporate mining closure guidelines will be developed during 2015.

#### **INCIDENTS AND FINES**

The corporate procedure to report and classify environmental incidents was harmonized with the safety model regarding reporting high-potential incidents [ $\rightarrow$  see p. 22]. During 2014, 34 environmental near-incidents were reported. However, none caused significant environmental impact.

Los Pelambres received two environmental fines in 2014. One related delay in building a park to display the archaeological pieces rescued during the construction of El Mauro, as set out in that tailings dam's environmental permit. TheC ompany filed a legal appeal to reverse the fine. At the date of this report, the Court had not yet ruled on this appeal.

In November 2014, Los Pelambres paid a fine of US\$ 5,000 due to a violation committed in 2012 by a contractor that felled vegetation without prior authorization from CONAF<sup>2</sup>. Currently, any work to be done by the Company, or any of its contractors, must first be approved by the environmental team to ensure that the corresponding permits are complied with.

<sup>&</sup>lt;sup>1</sup> International Council on Mining and Metals.

<sup>&</sup>lt;sup>2</sup> Corporación Nacional Forestal (National Forest Corporation).



Choapa river and valley.

#### **REGULATORY SETTING**

The Environmental Framework Law is the main environmental legal tool in Chile. It recognizes three institutions: the Ministry of the Environment, which sets public policy in environmental matters; the Environmental Assessment Service, which assesses the impact of projects; and the Environmental Commission, which oversees compliance with the law and the commitments of each company. Chile also has Environmental Courts that are subordinate to the Supreme Court.

An Environmental Impact Assessment (EIA) must be prepared for all projects and submitted to the SEA for approval. The SEA must decide whether the baseline studies adequately identify the impacts and whether the measures proposed in the project are enough to mitigate, compensate or make reparations for those impacts. This assessment includes formal public consultation. No project can be implemented (or changed, once approved) before receiving formal environmental approval set out in a legally binding document called the Environmental Qualification Resolution (RCA).

Chilean legislation on water and mining closure is also of particular interest to mining.

In 2014, the Chilean Congress began to debate new legislation on water rights and the protection of glaciers and biodiversity.

## Water EFFICIENCY AND **SEAWATER**

The drought in recent years has become a core concern for the communities in the Choapa Valley. Antofagasta Minerals recognizes that mining can affect both the availability and the quality of water and has therefore implemented innovative solutions to ensure both.



Our priority is to ensure that there is enough water to operate normally without impacting the quantity or quality of water for other users. We look for a maximum efficiency and use seawater whenever it is feasible.

The quantity and quality of water are continuously monitored according to Chilean law and each mining company's operating permits. The Water Bureau and the Health Service are responsible for this. Since 2012, this monitoring is being done in conjunction with the affected communities in the Choapa Valley.

Our operations are in constant dialogue with the communities to understand their concerns about water and look for joint solutions, especially at Los Pelambres. The latter is a member of the Choapa River oversight board and other local water organizations. It also engages with the community in the joint monitoring of the quantity and quality of water.

All operations have water management plans in place that are based on preparing water balances<sup>1</sup> and setting water quantity and quality goals. The Group reports its water footprint –sources of supply and levels of consumption– following the CDP<sup>2</sup> water programme methodology.

#### **EFFICIENCY AND QUALITY**

In 2014, we consumed a total of 47.4 million cubic meters of water: 44% was seawater and the rest was continental. The Group's reuse rate ranged from 71% to 87%, depending on the characteristics of each operation. The differential is due to natural evaporation and to the water that stays in tailings. There are no discharges into waterways.

The mining division carefully supervises the quality of the groundwater and surface water near its operations and the quality of the seawater near its coastal facilities in Punta Chungos (Los Vilos) and Caleta Michilla to prevent contamination.

The Group has pioneered the use of seawater, beginning with Minera Michilla in 1992. In 2010, Esperanza (now Centinela) became the world's first large-scale mining company to operate using raw seawater. Minera Antucoya<sup>3</sup> will also operate with seawater, as will the Encuentro Oxides project (now being built) and the next Centinela expansion.

The Group has also innovated in tailings management, pioneering the thickened tailings technology at Esperanza (now Centinela). Among the advantages of thickened tailings deposits: they require less water, occupy less land, are physically more stable and improve dust control.

<sup>&</sup>lt;sup>1</sup> Based on the Water Accounting Framework developed by Queensland University in Australia.

<sup>&</sup>lt;sup>2</sup> The Carbon Disclosure Project is an international leading organization in monitoring and reporting companies' carbon footprint and water consumption.

<sup>&</sup>lt;sup>3</sup> Minera Antucoya will begin operating in 2015.



#### Extraction by source

Water extracted, in ooo's of m<sup>3</sup>

	2012	2013	2014
CONTINENTAL WATER			
Surface water	14,765	15,463	16,628
Groundwater	9,394	7,569	8,397
Outsourced	1,293	1,417	1,737
SEAWATER			
Seawater	20,030	20,217	20,682
TOTAL	45,482	44,666	47,444

Water extraction at Centinela port facilities.

## 2015 Challenge

Continue to search for solutions -in conjunction with local inhabitants, authorities and other stakeholdersto mitigate the impact of the drought on the Choapa communities and to ensure the operational continuity of Los Pelambres. 44%

of the water used by the Group in 2014 came from the sea.

## Energy and climate change DIVERSIFYING WITH **RENEWABLE ENERGY**

In a nation where energy is in short supply, but there is opposition to new energy generation projects and concern about climate change, the Group has focused on being efficient and diversifying its sources, focussing heavily on renewable energy.



Energy accounts for approximately 15% of Antofagasta Minerals' cash costs, so it is imperative to ensure a continuous supply at competitive prices. The Group has constantly sought new ways to use electricity and fuel more efficiently, but consumption will continue to increase for three main reasons:

- The Company is growing; Minera Antucoya will soon begin operating and we are evaluating the construction of other projects.
- The existing mines are ageing and the ore grades are dropping, making it necessary to process a higher quantity of material in order to maintain production.
- Lastly, power consumption rises with the use of seawater because it has to be pumped from the coast to the working sites.

#### **Renewable Energy**

5%

of the energy consumed in 2014 came from renewable sources.

#### **RENEWABLE ENERGY**

Antofagasta Minerals has invested significantly in renewable energy, thus adding new sources of generation to the *Sistema Interconectado Central* (SIC), the central grid that supplies Minera Los Pelambres. El Arrayán was inaugurated in August 2014, the largest wind farm in Chile, in which Antofagasta Minerals holds a 30% stake and with which it has a supply contract. The Group also owns 40% of Alto Maipo, a run-of-river hydroelectric power plant now under construction, which will also supply Minera Los Pelambres when it begins operating in 2018 under a 20-year contract.

Since the inauguration of El Arrayán wind farm (115 MW) in 2014, 20% of the energy consumed by Los Pelambres comes from wind power. Los Pelambres also signed power purchase agreements with two solar power plants now under construction: one will come onstream in the first quarter of 2015 and the other in early 2016. These plants will give Los Pelambres a clean power supply representing close to 50% of its consumption. Starting in 2018, with the addition of the 110 MW from Alto Maipo, at least 80% of the energy consumed by Los Pelambres will come from renewable sources.

Due to the use of seawater in its new projects, Antucoya and Encuentro Oxides, the Group's energy consumption will increase as it will have to pump water from the coast to the working sites, at an elevation of 2,300 meters above sea level.

The Company is also evaluating ways to increase the supply of renewable energy to its operations and projects in the Antofagasta Region, supplied by the *Sistema Interconectado del Norte Grande* (SING), a grid which operates almost exclusively coal-fired power stations.



Centinela solar power plant.

#### **CLIMATE CHANGE**

The Group has measured and publicly reported its carbon emissions since 2009, following the CDP<sup>1</sup> methodology. The challenge now is to define a climate change strategy that will mitigate its carbon footprint. So, it is calculating marginal cost curves for abatement. This tool will help prioritize different greenhouse gas mitigation opportunities as there

will be a methodology in place to compare potential abatement to the cost of implementation (capex and opex) over a certain period.

In 2014, the Group emitted 2.1 million tonnes of  $CO_2$ , a reduction of 130 thousand tonnes compared to the previous year. The emission intensity fell by 3.6% because there was a significant decrease in the grids' emission factor, particularly on the SIC, with a

<sup>&</sup>lt;sup>1</sup> The Carbon Disclosure Project is an international leading organization in monitoring and reporting companies' carbon footprint and water consumption.



Since 2000, Minera Los Pelambres has used the energy generated by braking the conveyor belts (carrying ore from the mine to the plant) to generate electricity.

reduction of nearly 17% due to the addition of new sources of renewable energy in its matrix, among them El Arrayán wind farm.

The Group's electricity consumption remained constant compared to 2013. Fuel consumption fell by 3% with respect to the previous year. Centinela Concentrates underwent a more marked reduction due to managerial improvements, such as replacing trucks with other, more efficient vehicles.

#### **Energy consumption**

	2012	2013	2014
Electricity (MWh)	2,562,783	2,592,112	2,593,118
Fuel (m³)	179,844	201,127	195,538

### Greenhouse gas emissions (GHG)<sup>1</sup>

Tonnes of CO<sub>2</sub> equivalent

	2012	2013	2014
Scope 1	540,347	608,701	593,915
Scope 2	1,532,571	1,620,706	1,505,997
Total emissions	2,072,918	2,229,407	2,099,912
CO <sub>2</sub> emissions intensity	2.92	3.09	2.98

<sup>1</sup> The carbon emission data was verified by SGS, recognized auditors for the Carbon Disclosure Project.

## 2015 Challenge

Develop a strategy to mitigate the Group's carbon emissions.

#### EL ARRAYÁN WIND FARM: MORE CLEAN ENERGY TO LOS PELAMBRES

The El Arrayán wind farm was inaugurated in August 2014. Developed by Pattern Energy (70%) and Antofagasta Minerals (30%), its construction began in March 2012 after the approval of the Environmental Impact Assessment. With its US\$300 million investment, it is the largest project of its kind in Chile.

El Arrayán has an installed capacity of 115 MW and an average plant factor of 38% at maximum capacity, one of the highest in the country. Each of its 50 wind turbines can generate 2.3 MW. The towers are 80 meters high and each of the blades is close to 50 meters long. The rotor in each turbine has a diameter of 101 meters for the purpose of optimizing the delivery of energy in zones where wind is moderate.

El Arrayán sells 70% of its energy to Minera Los Pelambres under a 20-year contract for 280 GWh/ year, equal to 20% of Los Pelambres' demand. The rest is sold on the spot market.

The farm is located on the fourth Region coast, near Tongoy, in the municipality of Ovalle, around kilometer 390 of Highway 5 North. A transmission line running 21 km and a substation were built to connect it to the central grid (SIC). Located on 62 hectares of land, it occupies an area of 255 hectares, if the transmission line and substation are included. The towers and transmission lines of El Arrayán were carefully located respect the commitment of remaining invisible from the neighboring Fray Jorge national park.

The wind farm will have a useful life of 25 to 30 years. A closure plan must be implemented once that life ends and the farm must be dismantled in a way that will restore the characteristics of the environment surrounding it.

Pattern Energy is the largest wind farm operator in the United States. Apart from the United States, it has built parks in Canada and Puerto Rico. The company operates 11 projects that, when combined, equal an installed capacity of 1,472 MW. El Arrayán is Pattern Energy's first investment in South America.



# Air quality PROACTIVELY MANAGING **AIR QUALITY**

The presence of particulate matter in the air is a concern for neighbouring communities near to our mines. We proactively manage air quality through operating measures to prevent and mitigate our impact on air quality.



Air quality is regulated in Chile, but complying with the standard is not sufficient to satisfy the concerns of neighbouring communities. Thus, in addition to meeting legal limits, the Company has implemented specific measures to prevent and mitigate particulate matter.

Air quality management has always been of critical importance to Minera Los Pelambres because of its proximity to populations. In the last couple of years, it has also become a sensitive issue for Minera Centinela, because fo the three other mines operating in the area.

#### **PREVENTIVE MODEL**

The Group's operations continuously monitor the air quality at their camps and in the communities closest to them. Los Pelambres has an air quality prediction model that is used to anticipate the combination of climate factors that could trigger critical episodes of particulate matter. This information allows operating decisions to be adopted early to avoid impacts on air quality. Some examples are: rescheduling blasting, modifying the mining plan or temporarily stopping work.

Los Pelambres engages in several activities to keep its emissions within the legal limit. It has adopted measures specific to the different areas of its operation. For example, in the mine area, it has installed a dust reduction system and fogging nozzles, in addition to wetting roads, among other measures. A foam humidifier is used at the crusher plant in the crushing cup, stockpile and belts. The conveyor belts are encapsulated and the stockpile is kept moist by sprinklers.

In 2014, Centinela began to encapsulate the belt to the stockpile and cover the stockpile with a dome. It also supported the formation of an air quality committee in Sierra Gorda, led by the regional office of the Ministry of the Environment, of which the municipal authority and three mining companies operating near the town are members. The committee began to keep a consolidated record of emissions and it will study the factors impacting local air quality. As a result, an issue which, if ignored, could affect the health and quality of life of Sierra Gorda's inhabitants and put a stop to the growth of a zone rich in mineral resources, is being proactively addressed.



The stockpile dome at Centinela was completed in 2014.

Air quality is measured by the concentration of particulate matter present in it. The operations' emissions stayed within air quality standards in 2014.

#### Air quality

Annual average concentration of PM10 Micrograms per m<sup>3</sup>

	2012	2013	2014
Los Pelambres	44	45	46
Centinela <sup>1</sup>	39	46	39
Michilla	62	48	37

<sup>1</sup> After the integration of Esperanza and El Tesoro into Minera Centinela, it was decided that the El Tesoro monitoring station would be kept from now on because it is held for inspection. This explains the reformulation of this information in comparison to the previous year.

# 2015 Challenge

Ensure that our operations and projects have no impact on neighbouring communities' air quality through early introduction of operational measures. In 2014 a new law came into effect in Chile, requiring mine operators to plan for the decommissioning of their sites. Antofagasta Minerals is committed to safe decommissioning at the end of its mines' life cycles in such a way that is safe for people and the environment.



Since 2012, Chilean law requires mining companies to plan closure well in advance. Measures must be defined to control risks and funding to implement the closure plan must be assured. The Group's three operations have closure plans approved by Sernageomin<sup>1</sup>. According to national law, closure plans must be reviewed by this agency as part of its regular approval process. Every five years, closure plans must be updated and resubmitted for review.

In 2014 the Group set up a multidisciplinary team to standardize criteria ensuring it has consistent closure plans for its operations and projects. We must also progress in the definition of corporate closure guidelines as recommended by ICMM<sup>2</sup>.

#### THE CLOSURE OF MICHILLA

In November 2014, Antofagasta announced that Michilla would close in December 2015 as the most recent exploration confirmed there were no longer sufficient reserves to keep a mining operation of the scale required by Antofagasta Minerals, although it might be attractive to a mid-sized mining company.

The Michilla closure plan, which was updated in 2014, will be the first to be implemented in Chile under the new law. From an environmental perspective, the plan focuses on preventing long-term impacts. It protects the physical and chemical stability of the dumps and pits. Other important considerations are the dismantling of the facilities and waste management.

In planning the closure, the Company maintained the policy of transparency that has characterized its labour relations. It preferred to make an official announcement of the closure 14 months in advance, after which a scheduled collective negociation was successfully concluded. In addition to complying fully with the relevant laws, workers will be relocated, to the extent possible, to other companies within the Group. They will also be offered special retirement plans and job reconversion programmes.

The Company has evaluated that the closure of Minera Michilla should not have a significant socio-economic impact on the Caleta Michilla, located 10 km away, since Centinela will continue to operate its pier there.

Maintaining safety standards right up to the last day will remain a priority throughout the closure process. Operations will cease at the end of 2015, but closure should be completed by mid-2018.

<sup>&</sup>lt;sup>1</sup> Sernageomin is Chile's National Geological and Mining Agency.

<sup>&</sup>lt;sup>2</sup> International Council on Mining and Metals.





Closing Michilla in compliance with all commitments and learning from that experience to develop a corporate standard for future closures.

## Mine waste IMPROVING TAILINGS MANAGEMENT

The sustainable management of mine waste –rock dumps, spent ore and tailings dams– requires ensuring that it will remain physically and chemically stable, both during operation and after closure.

## Our Approach

The process to separate ore from rock generates considerable quantities of waste that is disposed of in spent ore heaps and tailings dams, authorized by specific permits. Standards for waste management determine design, are applicable during operation and continue to be enforceable after mine closure. The technical authorities oversees compliance on a regular basis.

The mining processes of Michilla, Antucoya and Centinela Cathodes generates spent ore. Los Pelambres and Centinela Concentrates generate tailings.

Given the size of Los Pelambres and its geographic location within the Choapa Valley, our main challenge is to ensure the physical and chemical stability of its dams and dumps during operation and after closure.

#### TAILINGS DAM STABILITY

The greatest engineering challenge for the design of any type of dam (including tailings dams) is to regulate the quantity of water inside the reservoir area under extreme weather conditions, such as intense rainfall, flooding or thaws. The objective is to ensure that, under no circumstances, water could spill over the containment wall or erode the stability of the dam structure.

Tailings dams contain waste from the ore concentration process. Its composition is particulate matter –fine sand, slime and clay– and their structure is determined by the the original rock's composition.

Los Pelambres has two tailings dams. El Mauro replaces its old Quillayes dam, now kept as a backup for emergency situations. A sector of the Quillayes is being remediated in consultation with the community [ $\rightarrow$  see p. 31].

Los Pelambres currently deposits its tailings in the Mauro dam, located in the Pupío valley, 12 km from the town of Caimanes in Los Vilos municipality. This dam is authorized to deposit up to 1.7 billion tonnes of tailings.

#### El Mauro dam

Los Pelambres' El Mauro tailings dam complies with the safety standards required by Chilean law and relevant international standards. It was designed to withstand extreme weather conditions and the most severe earthquakes predictable for the region. Its construction was authorized after undergoing the legally required Environmental Impact Assessment process. In addition, it must comply with specific standards reagrding water quality and quantity.

In compliance with a Supreme Court ruling in 2014 Los Pelambres updated its emergency planning to improve



Mine waste, Minera Michilla.

coordination with local authorities regarding emergency preparedness. It also provided refresher training to its supervisors on the subject that will be extended to its workers and contractors, many of whom live in Caimanes town. Drills will be conducted in 2015 to practice the procedures and incorporate improvements.

The dam meets all requirements established in its environmental permits and is in compliance with its specific water quality and quantity standards. However, in October 2014, the Supreme Court rendered a decision, albeit divided, that Los Pelambres must present a works plan to ensure the *"free flow of the water from the Pupio stream to Caimanes".* In observance of the ruling, the Company presented a works plan to the Los Vilos District Court in November, complementing the works already in effect. It also requested a report by the National Water Agency and an independent expert to verify that the works sufficed. In March 2015, the Los Vilos Court rejected the plan, before receiving the technical reports, ordering all or part of the dam's containment wall be demolished, arguing that the engineering works impeded the natural flow of water. The Company has appealed that decision and was permitted to continue operating the dam normally.

➔ More information on p. 32.

Companies generate industrial and domestic waste (from camp canteens). There are management plans and designated areas for the safe collection and recycling of these wastes. In 2014, 60% of all waste generated was either recycled or reused.

#### Waste management

Tonnes

	WA	STE CLASSIFICATI	N		TREATMENT		RECYCLING	
	Hazardous	Non Hazardous	Domestic	Recicled	Reused	Composted	Incinerated	RATE <sup>1</sup>
Los Pelambres	1,678	13,782	1,253	10,707	1,330	72	0	72%
Centinela	4,248	18,493	3,175	12,006	1,824	3	0	53%
Michilla	561	563	114	182	2	1	261	36%
Mining Group	6,487	32,838	4,542	22,895	3,156	76	261	60%

<sup>1</sup> Tonnes recicled by total waste generated.

#### EL MAURO DAM



#### Mine waste volume

Millions of tonnes

	2012	2013	2014
Waste rock	217	232	236
Tailings	94	95	92
Spent ore	11	17	19

#### PREVENTING CONTAMINATION

A basic condition in the design of the Mauro dam was to prevent clean, natural, water from coming into contact with tailings. To do so, a catchment system was built that includes a clean water reservoir and interceptor canals to convey the natural water to its point of entry to the Pupío stream, located downstream from the dam wall. The dam's operating rules set the quantity and quality of the water delivered by Los Pelambres at this point and it is overseen by the National Water Agency. The Pupio stream continues to flow naturally from this point without risk of contamination. The quantity and quality of water in the stream is overseen by the National Water Agency at two monitoring stations. It is also monitored by the community through participatory monitoring with the authorities and Los Pelambres.

In order to keep the processed water in the dam from infiltrating and making contact with the water in the Pupío stream, the processed water is pumped back to the mining plant and reused. Los Pelambres recirculates 85% of the water.

#### INNOVATION

There is an alternative type of tailings dam. The thickened tailings dam reduces the initial water content in the tailings until they have a paste-like consistency, which has environment advantages: requiring less water for deposition, using less land and controlling dust emissions more efficiently.

Antofagasta Minerals has pioneered this solution on a large scale: Minera Centinela deposits thickened tailings from its concentrates process. Although this technology's implementation has not been obstacle-free, adjustments are underway to attain the optimal ratio between solids and liquids.

Centinela's growth project, was also designed with a thickened tailings dam.



Thickened tailings deposit at Centinela.

## Myths about El Mauro tailings dam

## The dam makes the town of Caimanes unsafe.

- The Mauro dam was designed, built and is operated according to the highest international standards of safety and physical stability. It can withstand earthquakes above 9.0 on the Richter scale and the type of heavy rain forecast to occur every 5,000 years. It is also in compliance with all requirements of Chilean law, its environmental approval and its specific permits.
- The Chilean National Geological and Mining Agency and the National Water Agency<sup>1</sup> have been monitoring the dam every month since 2008 and have not found violations or risks.

## The dam could impact the quantity and quality of Caimanes' water.

Caimanes has a rural potable water system comprised of 4 wells that pump water from an underground aquifer. Enough water for 3,500 people is pumped from those wells, almost three times the present Caimanes population of 1,200. Consequently, unlike several other in the same drought zone, this town has no water supply issues.

- The Pupio stream is mostly fed by rainfall. Because of the current local drought, without Minera Los Pelambres' contribution of water –a condition established in the mining company' environmental permit– the Pupio would be dry.
- The quality of the Pupío stream and the drinking water in Caimanes are regularly overseen by the legally competent national agencies. There has never been any evidence of contamination.
- Moreover, the Caimanes community has been participating in water monitoring since late 2012. Together, the Caimanes Drinking Water Association, the National Water Agency, the Regional Health Service and Los Pelambres take water samples every month and have them analyzed by two different laboratories.



<sup>1</sup> Dirección General de Aguas.

## PRESERVING OUR NATURAL TREASURES

Chilean legislation and good international practices acknowledge the growing importance of protecting ecosystems, biodiversity and the archaeological heritage in each region. Antofagasta Minerals prevents, mitigates and compensates for its impacts, in addition to looking for opportunities to add value by supporting the rescue and safeguarding of our natural heritage.

## Our Approach

Antofagasta's efforts to protect biodiversity are concentrated in the Choapa Valley, where there are ecosystems and endemic species that require special protection. The other focus is to protect the marine biodiversity near our concentrate shipment and supply facilities in Los Vilos and Michilla. The third focus is to conserve cultural heritage by identifying and rescuing the archaeological remains left by the early dwellers in the territory and past mining operations. There are some sites in the Choapa province, where Los Pelambres operates, that have an especially rich biodiversity that the company has taken care to protect. It started in 2000 with the recovery of the Conchalí lagoon wetlands near Los Vilos. Los Pelambres transformed an unauthorised rubbish dump into a nature sanctuary, included in the list of Ramsar sites<sup>1</sup>. One of the few remaining Chilean palm tree forests is also preserved. The Santa Ines ranch, located near Pichidangui, was acquired in 2014 to ensure that what's left of its relict forest is protected.

In 2014, Los Pelambres inaugurated the Rural Exhibit of Monte Aranda, a showroom that displays the origins of Chilean country life and the customs of the valley's early inhabitants. The exhibition was the result of research by a group of Caimanes inhabitants who rescued local history and now work as hosts and guides.

The Group's companies participate in initiatives for conservation and appreciation of cultural heritage in the region of Antofagasta, through support for organizations such as the Fundación Gaviotín Chico, PROA, PROLOA and the Fundación Oficina Chacabuco. It has also sponsored books to put regional memories into writing.

## 2015 Challenge

Inagurate a park to display archaeological heritage rescued when El Mauro dam was built.

<sup>1</sup> The Ramsar Convention is a treaty to protect internationally important wetlands and plan for their sustainable use. Further information at www.ramsar.org

### CONSERVING BIODIVERSITY AT SANTA INÉS FOREST

The peak of mount Santa Inés, located in the Coquimbo Region, is home to one of the last relict forests of that area. Relict forests are remnants of the biota that extensively populated the zone in ancient times, reduced by climate change. The Region has the smallest number of protected areas in the nation, encompassing less than 1% of its area.

As part of the implementation of the National Biodiversity Strategy, the Chilean State has promoted identifying Priority Sites for Biodiversity Conservation. The aim is to bring to light areas of high value not currently protected by the National Protected Areas System and to develop strategies that will assure their conservation in the long term. Santa Inés, which is private property, was identified as one of these priority sites, but an alternative was required that would allow its conservation to be concretely financed and implemented. Minera Los Pelambres has been mining copper in the fourth Region of Coquimbo since 1999. In 2014, it promised to preserve Santa Inés in compensation for the impact of its operations on biodiversity. This measure will help stop the area's degradation and work toward its restoration and conservation in the long term.

Santa Inés sets an example of an initiative –soon to be implemented– where the private sector can help biodiversity conservation.

Source: Fifth National Report on Biodiversity. Environmental Ministry. Chile Government 2014.



Appendices

## VERIFICATION REPORT

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	(A free translation from the original prepared in Spanish)
	Santiago, May 8, 2015
	Messrs. Shareholders and Directors Antofagasta Minerals S.A.
	Independent Professionals Report
	We have reviewed the 2014 Sustainability Report of Antofagasta Minerals S.A., for the year ended December 31, 2014. Antofagasta Minerals S.A. management is responsible for the 2014 Sustainability Report.
	Our review was performed in accordance with the attestation work standards established by the Chilean Institute of Public Accountants. A review is substantially less in scope than an examination or audit, the objective of which is the expression of an opinion on the 2014 Sustainability Report. Consequently, we do not express such an opinion.
	The scope of our work included a review of the adequacy and implementation of the G4 GRI Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI G4).
	<ul> <li>In addition, we performed the following procedures:</li> <li>Scoping and planning based on the relevance and volume of the information presented in the 2014 Sustainability Report;</li> </ul>
	<ul> <li>understanding of the materiality process determined by Antofagasta Minerals S.A., the material aspects identified, management approaches and selected indicators, in accordance with the "core" option under the GRI G4, including indicators of the GRI Mining and Metals Sector Supplement developed in conjunction with the International Council on Mining and</li> </ul>
	Metals (ICMM); • interviews with different executives responsible for the information in the 2014 Sustainability B concrti
	<ul> <li>Report;</li> <li>verification, based on sample-based testing, that the data included in the 2014 Sustainability Report is consistent with the documentary evidence reviewed and/or comes from verifiable</li> </ul>
	<ul> <li>supporting information sources;</li> <li>verification that the financial information included in the 2014 Sustainability Report is derived from accounting records or from financial statements as of December 31, 2014 that were audited by another firm of independent auditors.</li> </ul>
	Details of both the verified and unverified indicators are shown on pages 59 to 62 of the 2014 Sustainability Report.
	Based on our review, we have no knowledge that the 2014 Sustainability Report of Antofagasta Minerals S.A., for the year ended December 31, 2014, is not presented in all material aspects, in accordance with the "core" option of the sustainability reporting guidelines G4 of the Global Reporting Initiative.
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	Colin Becker

## GLOBAL REPORTING INITIATIVE

### GRI - G4 Core Option

GENERAL STANDARD DISCLOUSURES	PAGE NUMBER	EXTERNAL VERIFICATION
STRATEGY AND ANALYSIS		
G4-1	2, 3	Verified p. 58
G4-2	2, 3, 14, 15, 18, 19, Annual Report 2014 Antofagasta plc (pp. 17 to 19; 34 to 37)	Verified p. 58
ORGANIZATION PROFILE		
G4-3	Cover	Verified p. 58
G4-4	4. Annual Report 2013 Antofagasta plc (pp. 2, 3, 20)	Verified p. 58
G4-5	Cover	Verified p. 58
G4-6	4, 5. Annual Report 2014 Antofagasta plc (pp. 2, 3)	Verified p. 58
G4-7	Antofagasta is a public listed company	Verified p. 58
G4-8	7. Annual Report 2014 Antofagasta plc (p. 20, 21).	Verified p. 58
G4-9	4 - 7	Verified p. 58
G4-10	5, 6, 27	Verified p. 58
G4-11	27	Verified p. 58
G4-12	6, 7, 21	Verified p. 58
G4-13	4. Annual Report 2014 Antofagasta plc (pp. 41, 42, 44 to 47)	Verified p. 58
G4-14	38, 39	Verified p. 58
G4-15	10	Verified p. 58
G4-16	10, 20	Verified p. 58
MATERIAL ASPECTS AND BOUNDARIE	S	
G4-17	Antofagasta plc' Annual Report 2014 covers the	Verified p. 58
	controller group of Antofagasta Minerals, Aguas Antofagasta and Ferrocarriles de Antofagasta. The last two companies are not covered in the 2014 Sustainability Report.	Verified p. 58
G4-18	Cover	Verified p. 58
G4-19	Cover	Verified p. 58
G4-20	63	Verified p. 58
G4-21	63	Verified p. 58
G4-22	47	Verified p. 58
G4-23	This Report only covers Antofagasta Minerals, as in the 2013 Sustainability Report.	Verified p. 58
STAKEHOLDER ENGAGEMENT		
G4-24	21	Verified p. 58
G4-25	21. The company identified its main stakeholders as those who are part of its value chain, those who might be impacted by its operations and those may have an impact on its business.	Verified p. 58
G4-26	Cover, 20, 21	Verified p. 58

GENERAL STANDARD DISCLOUSURES	PAGE NUMBER	EXTERNAL VERIFICATION
REPORT PROFILE		
G4-28	Cover	Verified p. 58
G4-29	Sustainability Report 2013 (released in August 2014)	Verified p. 58
G4-30	Cover	Verified p. 58
G4-31	Cover	Verified p. 58
G4-32	Cover. 59	Verified p. 58
G4-33	Cover. 58	Verified p. 58
GOVERNANCE		
G4-34	13. Annual Report 2014 Antofagasta plc (p. 74)	Verified p. 58
G4-35	13. Annual Report 2014 Antofagasta plc (pp. 75, 83)	Verified p. 58
G4-36	13. Annual Report 2014 Antofagasta plc (pp. 84, 85)	Verified p. 58
G4-37	Annual Report 2014 Antofagasta plc (p. 78)	Verified p. 58
G4-38	Annual Report 2014 Antofagasta plc (pp. 75, 76)	Verified p. 58
G4-39	Annual Report 2014 Antofagasta plc (p. 75)	Verified p. 58
G4-40	Annual Report 2014 Antofagasta plc (pp. 82 to 84)	Verified p. 58
G4-41	16. Annual Report 2014 Antofagasta plc (p. 77, 101)	Verified p. 58
G4-42	13. Annual Report 2014 Antofagasta plc (pp.74, 75)	Verified p. 58
G4-43	Annual Report 2014 Antofagasta plc (pp. 76, 78)	Verified p. 58
G4-44	Annual Report 2014 Antofagasta plc (p. 78)	Verified p. 58
G4-45	13, 15. Annual Report 2014 Antofagasta plc (pp. 74, 75, 79 to 81)	Verified p. 58
G4-46	13. Annual Report 2014 Antofagasta plc (pp. 74, 75, 79 to 81)	Verified p. 58
G4-48	Annual Report 2014 Antofagasta plc (p. 85)	Verified p. 58
G4-51	Annual Report 2014 Antofagasta plc (pp. 86 to 90)	Verified p. 58
G4-52	Annual Report 2014 Antofagasta plc (pp. 86 to 90)	Verified p. 58
ETHICS AND INTEGRITY		
G4-56	8, 9, 10, 16	Verified p. 58
G4-57	16	Verified p. 58
G4-58	16	Verified p. 58

SPECIFIC STANDARD DISCLOSURES	PAGE NUMBER	EXTERNAL VERIFICATION
ETHICS AND INTEGRITY		
G4-DMA	16	Verified p. 58
G4-SO4	16	Verified p. 58
ENVIRONMENTAL COMPLIANCE		
G4-DMA	38	Verified p. 58
G4-EN29	38	Verified p. 58
HEALTH AND SAFETY		
G4-DMA	2, 22	Verified p. 58
G4-LA6	23	Verified p. 58
LABOR RELATIONS		
G4-DMA	15, 26, 27	Verified p. 58
LA12	27	Verified p. 58
HR4	15, 27	Verified p. 58
MM4	27	Verified p. 58
WATER		
G4-DMA	40 - 41	Verified p. 58
G4-EN8	40 - 41	Verified p. 58
G4-EN9	40 - 41	Verified p. 58
G4-EN10	40 - 41	Verified p. 58
ENERGY		
G4-DMA	42	Verified p. 58
G4-EN3	44	Verified p. 58
G4-EN6	44	Verified p. 58
BUSINESS DEVELOPMENT		
G4-DMA	Annual Report 2014 p. 28 and 39. 8,10,11	Verified p. 58
G4-EC1	6 у 7	Verified p. 58
RISK MANAGEMENT		
G4-DMA	14	Verified p. 58
SUSTAINABILITY STRATEGY		
G4-DMA	10	Verified p. 58
INCIDENTS AND CONFLICTS	10.01	Verified a EQ
G4-DMA	12, 31	Verified p. 58
G4-EN24	<u>38</u> 31	Verified p. 58 Verified p. 58
G4-SO11	51	vermed p. bo
MINING WASTE	50	
G4-DMA	50	Verified p. 58
G4-MM3	52	Verified p. 58
CONTRIBUTION TO LOCAL DEVELOPM		
G4-DMA	30	Verified p. 58
G4-EC7	35 - 37	Verified p. 58
G4-SO1	36	Verified p. 58
ENGAGEMENT		
G4-DMA	20	Verified p. 58

SPECIFIC STANDARD DISCLOSURES	PAGE NUMBER	EXTERNAL VERIFICATION
AIR		
G4-DMA	46	Verified p. 58
G4-EN21	47	Verified p. 58
MINE CLOSURE		
G4-DMA	48	Verified p. 58
G4-MM10	48	Verified p. 58
		Vermed p. 56
CONTRIBUTION TO LOCAL ECONOMY		
G4-DMA	36	Verified p. 58
G4-EC9	6	Verified p. 58
G4-EC8	6, 7	Verified p. 58
G4-LA15	15, 22, 28	Verified p. 58
GOVERNANCE		
G4-DMA	13	Verified p. 58
CLIMATE CHANGE	40	V/ :(;
G4-DMA	42	Verified p. 58
G4-EC2	40, 42 43, 44	Verified p. 58
G4-EN15	43, 44	Verified p. 58
G4-EN16	43, 44	Verified p. 58
G4-EN18	43, 44	Verified p. 58
G4-EN19	43, 44	Verified p. 58
QUALITY EMPLOYMENT AND TRAINING	G	
G4-DMA	26, 28	Verified p. 58
G4-LA2	24	Verified p. 58
G4-LA9	26	Verified p. 58
G4-LA10	26, 48	Verified p. 58
HERITAGE		
G4-DMA	55	Verified p. 58
BIODIVERSITY		
G4-DMA	55	Verified p. 58
G4-EN11	55	Verified p. 58
G4-EN13	55. This figure is not presently available. It will be	Not verified
VALUE CHAIN	reported next year.	
G4-DMA	28	Verified p. 58
SOCIAL IMPACTS		N/ 10 1 70
G4-DMA	30	Verified p. 58
G4-SO2	30, 32	Verified p. 58
OTHER ENVIRONMENTAL ASPECTS		
G4-DMA	51	Verified p. 58
G4-EN23	51	Verified p. 58

#### TOPIC MATERIAL ISSUE COVERAGE: WHERE IS IT RELEVANT? WITHIN ANTOFAGASTA BEYOND ANTOFAGASTA MINERALS MINERALS AMSA Los Pelambres Centinela Michilla Group Strategy, governance and ethics Ethics and integrity x (contractor companies) х х Х х Compliance x (contractor companies) х х х х Risk management x (contractor companies) Х Х х Х Business development Х х Х Sustainability strategy х х х х Governance Х Environment Water Х Х Х х Energy х х х х Mine waste х Х х Air Х х Х Х Mine closure х х х х Climate change Х Х х Х Biodiversity Х Х Х Х Heritage х х Х Other environmental impacts Х Х х Х Society Incidents and х х х х conflicts Contribution to local development Х х Х Contribution to local economy, employment and suppliers х Х Х Engagement х Х Х Х Social impacts x (contractor companies) Х Х Х Х Employment Health and safety x (contractor companies) Х Х Х Х Labor relations х х Х Х Value chain x (contractor companies) Х Х Х х Quality employment x (contractor companies) Х Х Х Х

#### G4-20, 21: Reporting coverage for each material issue



### 2014 SUSTAINABILITY REPORT

Management Public Affairs Division, Antofagasta Minerals

**Contents** Kodama & Mex

**Design and production** Loreto Cammas Diseño

April, 2015

The paper used to print this report comes from sustainably managed forests.

ANTOFAGASTA Minerals APOQUINDO 4001 - 18<sup>TH</sup> FLOOR SANTIAGO, CHILE TEL: (56-2) 2798 7000

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