

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

# Environmental performance

## Strategy and challenges

Our commitment to environmental management is applied all throughout the life cycle, incorporating sustainability criteria from the planning stage to mine site closure. To support this commitment, Codelco has developed policies and regulations and has set up community and environmental standards that ensure that compliance of the ICMM principles and position statements is being implemented and followed.

Codelco's sustainable management includes the prevention and control of impacts associated to emissions, discharges, and waste; the efficient management of such important resources as water and energy, as well as territory, land, landscape, biodiversity, and mine closure topics.

Among the aspects considered in corporate performance assessments and tracking by senior executives in relation to planned business strategy goals, we can find the measures and objectives of our Environmental Risk Management System (SGRA) focused mainly on the closure of social-environmental gaps identified in our mine sites and operations.

The SGRA is in charge of managing other aspects, such as the prevention, evaluation, and learning of environmental incidents, the response to environmental grievances and suggestions, and fulfillment of regulatory obligations, contained in Environmental Qualification Resolutions (RCA).

Thus, our short-term challenges on which 2015 management was focused were:

- Consolidate the implementation of the new environmental risk management system, strengthening the continuous improvement of our environmental performance.

- Close gaps, eliminate or mitigate the risks associated to the main social-environmental vulnerabilities identified in the SGRA.
- Update the corporate environmental regulatory instruments.
- Capture 95% of all emissions in all divisions by 2018 - 2019, prompted by a legislative change.
- Zero occurrence of environmental severe and very severe incidents.

Another achievement in management in 2015 was the strengthening of the mechanisms that will facilitate the inclusion of land use assessments and the contribution to biodiversity conservation in our decision-making processes. This, as part of our adherence to Principles 6, 7, and 8 of the International Council on Mining and Metals (ICMM) where Codelco is a member.

In relation to internal regulations, two of the most significant corporate norms associated to sustainability are: NCC 24 about identification and planning of critical sustainability aspects from the earliest stages of each investment project to its closure; and NCC 38 about the prevention, recording, and control of environmental incidents. Both were submitted to an update process during 2015.

Message from our CEO

Sustainability-related  
commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



### G4-14

In line with our values, we adhere to the Precautionary Principle of Article 15, of the Rio Declaration on environment and development. Our environmental management practices pursue the formulation and execution of all possible measures leading to the identification and control of environmental risks. The management of social-environmental vulnerabilities, addressed in the Environmental Risk Management System, is an example of this.

### Environmental investments end expenses

#### G4-EN31

US\$ 295 million were invested in environmental initiatives in 2015; among these are water treatment, tailings management, waste and emissions management, and also the handling of environmental aspects associated to Codelco's large structural projects.

As to environmental expenses incurred by the different divisions in 2015, these amounted to US\$ 370 million, mainly devoted to environmental monitoring, waste management, and general administration.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



**Given the nature, context, and magnitude of our operations, the management of resources as critical as water and energy becomes key in our business vision.**

### **Corporate water and energy management**

Codelco is well aware that energy and water are strategic and indispensable resources for mining operations and, at the same time, vital and scarce for human population; therefore, their management calls for productive and increasingly sustainable operations.

Considering their importance, at corporate level we have the Energy and Water Resources Management whose main responsibility is enforcing the Sustainable Development Policy, fostering the efficient use of energy and water resources to reduce greenhouse-gas effects (GEI) and their impacts. The above stands out as part of our alignment and commitment to ICMM principles and position statements (Principle 2 and 6 and position statement on climate change).

In this sense, we have strengthened our corporate management strategies by developing two corporate standards: Energy Efficiency and Climate Change Standard and the Water Resources and RILES Standard, in an effort to ensure efficient and sustainable water and energy management.

In 2014, Codelco subscribed an Energy Efficiency Partnership Agreement (EE) with the Ministry of Mining and conducted a systematic search of energy efficiency opportunities in all operations; the initiatives were prioritized according to their unit cost and their impact on energy consumption. In 2015, the projects fastest to implement were materialized in all divisions.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

**Our commitment to efficiently manage the use and recycling of water resources is renewed daily in all our work centers.**



### **Efficient water management**

In 2012, Codelco put in place strategies and mechanisms designed to ensure that water is responsibly managed and treated, well aware of regulatory obligations and water needs within our area of influence, especially in the divisions located in the middle of desert climate conditions in our country.

We are committed to securing sustainable availability and management of current and future water resources for operations, projects and the business, considering territorial aspects while preventing and controlling associated social-environmental impacts.

### **G4-EN9**

In Chile, the norm destined to regulate the identification of impacts on water sources is related to the fulfillment of Water Rights and Environmental Qualification Resolutions (RCA) and, in relation to the above, acquired water rights entail the protection of third parties' rights and the fulfillment of the provisions established by

environmental authorizations on the subject. Codelco has not breached this regulatory framework.

### **Water withdrawal and recirculation**

#### **G4-EN8, G4-EN10**

Water supply in our operations is based on the exploitation of own sources, most of them correspond to long-standing water rights. As to availability, we monitor and control the environmental variables and supervise water extraction from the sources and, mainly, we strive to reduce water supply demands by applying water efficiency which seeks to maximize recirculation and reduce consumption per ton of processed ore.

As required by our environmental standards, we are currently in the process of developing initiatives to maintain high levels of use efficiency. We have an inventory and systems to monitor surface and underground water sources installed all over the Corporation and we assess the impacts associated to the exploration and exploitation of new water resources.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

Codelco uses mainly waters coming from surface or underground sources in all divisions while water is more relevant in the five divisions located in desert climates. For this reason, efforts are centered in maintaining high levels of recirculation in the North District and Salvador divisions.

In 2015, total water withdrawn in the Corporation was 177,862 thousand m<sup>3</sup>, higher than volumes withdrawn in 2014 (170,425 thousand m<sup>3</sup>) which means that the use must become more efficient

in the production processes. The total recirculation percentage in the Corporation for the year reported was 78.5%, representing an approximate total of 649 million m<sup>3</sup>, following the tendency exhibited in the last five years towards improvement of recirculation processes and the efficient use of water resources together with an increase in annual copper production.

### Water withdrawal and recirculation 2015 (thousand m<sup>3</sup>)

		Radomiro Tomic	Chuquicamata	Ministro Hales	Gabriela Mistral	Salvador	Andina	Ventanas	El Teniente	Total
Withdrawal per source	Surface water	(-)	58,364	(-)	(-)	15,708	20,526	(-)	41,577	<b>136,175</b>
	Underground water	(-)	(-)	7,862	5,567	5,748	3,797	906	553	<b>24,435</b>
	Mine water	7	374	1,318	(-)	(-)	6,548	(-)	5,140	<b>13,387</b>
	Municipal water	(-)	(-)	(-)	(-)	(-)	6	427	(-)	<b>434</b>
	Rainfall	(-)	(-)	(-)	(-)	(-)	3,431	(-)	(-)	<b>3,431</b>
	Total withdrawn	7	58,738	9,180	5,567	21,457	34,309	1,334	47,271	<b>177,862</b>
Water from third parties		8,348	NA	283	NA	NA	NA	NA	NA	<b>8,631</b>
Recirculation	Total recirculated	80,269	373,423	2,572	55,536	25,322	35,851	71	75,846	<b>648,890</b>
	% of recirculation	90,6	88,1	21,4	90,9	54,1	51,1	5,1	61,6	<b>78,5</b>

(-) No withdrawal.

Withdrawal values reflect the total water used both in production processes as well as in general processes (truck wash, irrigation, etc.).

Recirculation percentage is obtained by dividing the total amount of recirculated water by the total volume of water used in the divisions, including withdrawal, recirculation, and waters received from third parties.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

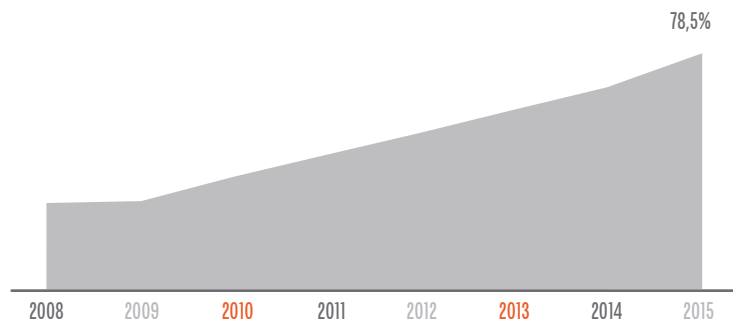
Community relations

Verification letter

ICMM

GRI Index

## Corporate recirculation (2008 -2015)



### Energy management

Given the magnitude of our current and future operations, Codelco seeks to establish and implement new criteria concerning energy efficiency and the use of renewable energy from our business plans.

Energy is a strategic input for the mining industry, not only for the magnitude of energy needs demanded by the different processes but also for its impact on the extraction and productive operation costs.

To ensure our energy management practices will optimize, both physically and economically, the use of water, we consider energy efficiency and the use of renewable energy as core aspects, striving to contribute to the mitigation of climate change effects and promoting adaptation measures, on the basis of the mining life cycle.

Codelco has put in place an energy management system intended to contribute to the business results, by both managing current operational circumstances –improving specific indicators of energy

use in production processes- as well as by applying a forward-looking approach to the scenario, embracing energy efficiency in projects and strengthening the development of new energy sources.

Codelco’s energy management system has been structured around four main axes: management of existing contracts, energy efficiency management in processes, renewable energy, and energy efficiency in investment projects.

These axes are developed in each division while their follow-up and control is conducted on a corporate basis which allows sharing improvement actions and creating a potential portfolio of practices to be transferred. Specifically, in terms of renewable energy management, Codelco seeks to reduce costs and greenhouse-gas emissions in its operations.

### Energy consumption and reduction initiatives G4-EN3

Direct energy consumption is construed as the use of oil and its by-products, natural gas, and coal in productive processes while indirect consumption is associated to the use of electric power coming from the Central Interconnected System (SIC) and Norte Grande Interconnected System (SING), excluding own generation.

In 2015, total direct energy consumption (oil by-products, coal, and natural gas) was 23.20 petajoules (PJ) while indirect consumption (electricity) was 25.69 PJ which, as a whole, represents a total energy consumption of 48.89 PJ, equivalent to 13,580 gigawatts-hours (GWh).

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

#### G4-EN6

As to reductions achieved during 2015, these are estimated to be 220 terajoules (TJ). These initiatives have come as a result of energy efficiency audits performed in 2014. Important reductions were made in facilities circuits and other optimization projects.

#### G4-EN5

Energy use intensity was 28.40 PJ/million FMT which is lower than 2014 figures of 29.6 PJ/million FMT. Consumptions for total production do not consider El Abra or Anglo American Sur operations, where Codelco maintains a partnership interest.

### Smelter emissions management

#### G4-EN21

Codelco owns four (4) copper concentrate smelters that generate, mainly, sulfur dioxide (SO<sub>2</sub>), arsenic (As), and particulate material (MP). These facilities are governed by emission regulations and others by decontamination plans applicable to the cities located within the area of influence of its operations. In 2015, all smelters met the established limits and/or norms.

Smelter emission (thousand tons)					
Smelter	Type of emission	2013	2014	2015	Annual limit
Chuquicamata Chuquicamata division	SO <sub>2</sub>	113	89.06	95.42	A
	MP	0.23	0.001	0	1.85
	As	0.71	0.73	0.32	0.8
Potrerillos Salvador division	SO <sub>2</sub>	68.4	84.4	67.60	100
	MP	0.47	0.32	0.18	5.5
	As	0.24	0.75	0.43	0.8
Ventanas Ventanas division	S	6.87	7.43	7.07	45
	MP	0.13	0.07	0.12	1
	As	0.06	0.04	0.05	0.12
Caletones El Teniente division	SO <sub>2</sub>	52.82	59.94	54.41	A
	MP	B	B	B	A
	As	0.23	0.18	0.22	0.38

A: The Air Quality Standard is applied, measured in concentration of contaminants.

B: In 2003, Caletones smelter ceased to measure of emissions and today must apply the Quality Standard for Particulate Material (MP).

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



Likewise, in 2015 Ministro Hales division started to measure and inform the authority about its emissions. In 2015 these were 0.13 thousand tons of sulfur dioxide (SO<sub>2</sub>) and 0.00004 thousand tons of arsenic (As).

**Direct and indirect greenhouse-gas emissions (GEI)**

Codelco has in place an Energy Efficiency and Climate Change Standard through which, even though the main influence comes from the performance of the systems in charge of supplying the electric power, we try to optimize the physical and economic consumption of energy inputs, considering the efficient use of energy and renewable energy

in our new projects and operations.

**G4-EN15 G4-EN16**

Based on the above, we are determined to identify our contribution in terms of greenhouse-gas emissions. To this effect, we have measured direct and indirect emissions expressed in terms of equivalent carbon dioxide (CO<sub>2</sub>e). Direct emissions are those generated by the use of fuels in operations while indirect emissions are produced by energy generation systems in charge of supplying electric power to the divisions (SING and SIC).

Greenhouse-gas effect emissions (GEI)					
Emissions		Unit of measure	2013	2014	2015
Direct		t CO <sub>2</sub> e	1,688,361	1,604,819	1,586,922
Indirect	SING	t CO <sub>2</sub> e	2,775,717	2,712,672	2,638,869
	SIC		1,292,488	1,321,206	1,248,278
<b>Total</b>			<b>5,756,566</b>	<b>5,638,697</b>	<b>5,474,069</b>

Values of Carbon Emission Factors (FEC) and Oxidized Carbon Fraction (FCO) were drawn from the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories Workbook (Volume 2), Table 1-2 and Table 1-4.

Indirect emissions were calculated based on the emission factors of the interconnected system provided by the Ministry of Energy.



Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



#### G4-EN18

In 2015, total GEI emissions were 5.5 million tons of CO<sub>2</sub>e, lower than the 5.7 CO<sub>2</sub>e for 2014. GEI emission intensity for 2015 was 3.2 tons of CO<sub>2</sub>e/ FMT, measured only for category 1 and 2.

GEI intensity emissions				
	Métrica	2013	2014	2015
Total emissions	million tons of CO <sub>2</sub> e	6.0	5.7	5.5
Copper production*	million FMT	1.6	1.7	1.7
Intensity	t CO <sub>2</sub> e/million FMT	3.7	3.4	3.2

\*Producción total de la Corporación, no incluye la producción de Minera el Abra y Anglo American Sur.

Nota: No existen otros tipos de emisiones incluidos en el cálculo de intensidad

#### G4-EN19

With respect to GEI Emission Reduction Initiatives, in 2015 we prepared the bid process for the construction, operation, and electric generation by using the tailings flow in Cascada N°1 resulting from the transport of tailings between Colón and El Teniente Carén dam. This particular project will be started by mid-2017 and will be the first of its kind in the world.

According to the energy audit completed in 2014, a total of 8 projects of rapid implementation was executed in the divisions in 2015.

Pursuant to the program “public solar roofs” launched by the Ministry of Energy, Codelco prepared a bid process, to be implemented during 2016, intended to incorporate photovoltaic energy in its institutional buildings.

#### Manejo de residuos industriales líquidos

In 2015, Codelco operated 15 discharges controlled by monitoring programs, all of them compliant with the quality limits mandated by the standard, as shown in the Table below. It must be noted that Radomiro Tomic, Chuquicamata, Ministro Hales, and Gabriela Mistral divisions, do not discharge liquid industrial waste into water courses.

There are some discharge points authorized by monitoring program Resolutions. However, due to management reasons, these have ceased to discharge effective liquid industrial waste, even if their monitoring programs are still current. This is the case for 3 discharge points in Salvador and 5 in Andina divisions.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

## G4-EN22

Liquid industrial waste					
Division	N° of discharge points with monitoring programs (SISS/DIRECTEMAR)	Total volume discharged (thousand m³)			Type of destination
		2013	2014	2015	
Salvador	3	0	0	0	Surface waters
Andina	10	19,332	14,664	13,678	Surface waters
Ventanas	1	395	364	335	Sea waters
El Teniente	1	38,648	22,505	41,976	Surface waters
<b>Total</b>	<b>15</b>	<b>58,375</b>	<b>37,533</b>	<b>55,989</b>	

## G4-EN26

All liquid industrial waste discharges resulting from our operations comply with the applicable national legislation; that is, they do not affect water bodies.

## Solid industrial waste management

### G4-EN23

In this case, the management base lies on the implementation of the Solid Waste Standard, identifying and minimizing their generation, in line with ICMM Principles 6 and 8; additionally, all process stages are

controlled, thus adding value to the business. The waste management process takes place in handling centers where waste is classified and then sent to final authorized destinations.

Considering that solid industrial waste management is a key activity in environmental management, due to the large volumes and/or risks associated to hazardous and non-hazardous waste, all divisions have put in place management plans to control and prevent the occurrence of impacts on people or on the environment.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



### Disposal of solid waste per type (in tons)

Division	2014		2015*	
	Hazardous	Non- hazardous	Hazardous	Non- hazardous
Radomiro Tomic	4,785	7,675	3,653	4,431
Chuquicamata	23,929	39,213	30,101	41,801
Ministro Hales	18,953	1,837	51,187	2,741
Gabriela Mistral	869	406	1,269	460
Salvador	3,441	1,204	4,398	1,585
Ventanas	46,883	1,664	45,343	9,716
Andina	3,886	10,699	1,579	14,238
El Teniente	61,355	19,592	63,814	18,854
<b>Total</b>	<b>164,101</b>	<b>82,290</b>	<b>201,344</b>	<b>93,826</b>

(\*) Data from Ministro Hales, Salvador, and Chuquicamata divisions reflect approximate values, according to internal information handled by Codelco.

All waste generated is sent to approved final disposals: authorized safety deposits, sanitary landfills or to treatment companies. Hazardous waste is recorded by the Hazardous Waste Declaration and Tracking System (SIDREP), of the Ministry of Health.

Waste sent for recycling or re-use include hazardous and non-hazardous waste; eg., oils, lead anodes, iron scrap, wires, etc.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

## Massive mine waste

### G4-MM3

Massive mine waste management is conducted following the Massive Mine Waste Standard and, through its Implementation Guide, seeks to prevent and control impacts on people, the environment, and the land, thus strengthening risk management in areas of tailings, slags, waste, low-grade ore, and leach tailings in every mine site development stage, applying control criteria in the design of dams, operations, and projects.

Amount of massive mine waste generated 2015 (thousand tons)					
Division	Tailings	Slag	Waste	Low grade ore	Leach tailings
Radomiro Tomic	NA	NA	100,033	90	0
Chuquicamata	55,208	737	103,565	5,323	14,548
Ministro Hales	16,357	NA	85,336	0	0
Gabriela Mistral	NA	NA	31,966	0	11,869
Salvador	8,164	0	12,941	9,444	17
Ventanas	NA	278	NA	NA	NA
Andina	30,543	NA	50,321	0	NA
El Teniente	52,834	0	5,098	0	0

Special mention should be made of El Teniente division where all slags were reprocessed. Other divisions have also started massive mine waste recovery processes like the reprocessing of slags coming from Ventanas division in El Teniente.

As in previous years, and as part of the commitment to improve waste management and to optimize our operations based on innovative

technologies, the divisions have looked for alternatives to recover copper contained in metallurgical dusts (dusts from the smelting process). In these matters, Ecometales has successfully reprocessed the metallurgical dusts coming from Ventanas, Chuquicamata, El Teniente, Salvador, and Ministro Hales divisions.

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

### Environmental incident management

#### G4-EN24

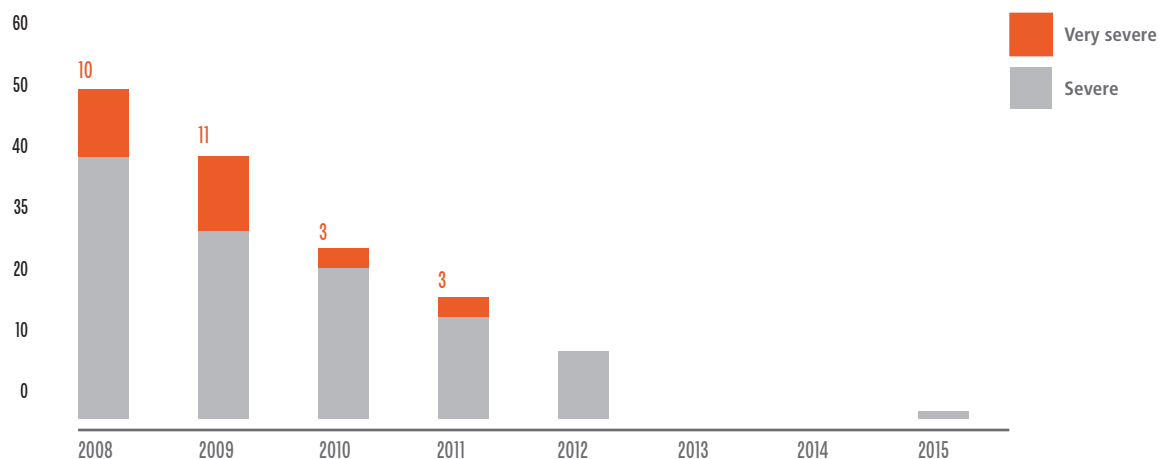
In 2013 Codelco put in place the Environmental Incident Management System destined to analyze and learn from each event in order to prevent environmental impacts, promoting their dissemination in a corporate online platform. This system distinguishes four categories of incidents: minor, serious, severe, and very severe.

While in the last years Codelco did not experience “severe” or “very severe” environmental incidents, in September 2015, an incident rated as severe by Codelco’s NCC 38 standard, took place in Salvador

division. The incident was marked by a leakage and ensuing runoff of 40 tons of copper concentrate from conveyance pipelines; the run-out distance reached the ravine adjacent to the installations and Salado river. The Salvador division started a thorough inquiry into the operational incident that affected its filter plant and informed the authority and the community.

In conclusion, 101 environmental incidents occurred in 2015, including a severe incident, described above, 97 minor incidents, and 3 serious incidents.

## Incident category



Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



**Biodiversity and territory**

Codelco is committed to help preserve biodiversity and minimize the impacts on ecosystems and on the areas of influence of our projects, operations, and explorations, respecting protected areas and managing the land planning in an inclusive way (ICMM Principles 6 and 7 and Position Statement on Protected Areas).

In 2012 Codelco put in place the Biodiversity and Territory Standards and their respective Implementation Guides. By applying these standards, the divisions will be better prepared to identify and characterize its ecosystems within their areas of influence and to define their initiatives associated to protection and/or conservation. Our Territory, Soil, and Landscape Standard integrates the territorial variables in the business life cycle which helps increase the viability of the different stages of projects (explorations, operations, and mine site closure) and other initiatives developed by Codelco with the purpose of ensuring the land will be sustainably used. In general, our standards set up the minimum criteria to be executed, such as: baseline formulation, impact management, creations of variables that predict the “future”, and definition of strategic indicators that expedite the management, tracking, and assessment of their impacts.

Our impact management practices are focused on the assessment and monitoring of our risks in the different types of scenarios (terrestrial, aquatic, maritime), identifying and characterizing the area of influence and then setting up management plans, and conservation programs which are to be implemented in the different steps of a project. Likewise, as part of our commitments, we encourage, engage/collaborate in the different protection and/or conservation initiatives at local and national level, towards the strengthening of biodiversity.

**Biodiversity-rich areas**

**G4-EN11- G4-EN12- G4-EN13- MM2**

Our divisions are located in large areas of the national territory – not only from North to South, from the Big North to central Chile – but also from the Andes to the sea. This implies a wide ecosystem diversity of its territories.

Biodiversity-rich areas managed by Codelco are those recognized by the State and/or by environmental impact studies or statements. These areas are located around tailings dams in the region of Valparaíso and are part of the Rinconada de Huechún estate in Andina division and of

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

Los Cobres de Loncha ecological estate in El Teniente division. Both areas exhibit strong differences in climate, landscape composition, and ecosystem diversity. It is important that these areas be monitored through management plans to identify the presence and population of flora and fauna species in conservation categories.

The **Rinconada de Huechún Estate** covers a 1,033-ha preservation area and a 1,618-ha conservation area. An ecosystem characterized by thorny shrubs and rich in bird species prevails in both these areas. At present, this estate is covered by a natural resources management plan that includes a fauna monitoring program destined to identify likely impacts.

On the other hand, **Los Cobres de Loncha Ecological Estate** is located in the Alhué commune, in the Roblería del Cobre de Loncha National Reserve and extends over 5,980 ha. This estate was ceded on a bailment basis by El Teniente to the National Forest Corporation (CONAF) for its administration. This reserve hosts vulnerable flora and fauna species, most of them endemic population mainly pertaining to the Sclerophyll forest type. These are covered by a management plan intended to address the main impacts caused by the tailings dam by means of forestation programs, rescue, and relocation of individuals.

As to other biodiversity-rich areas near our operations, we find the Río Blanco National Reserve, adjacent to Andina division, stretching over an area of 10,175 ha. It exhibits no significant environmental impacts, therefore it has not been included under a management plan to date.

Additionally, Codelco handles an area rich in marine biodiversity close to Salvador and Ventanas divisions: the **port of Barquito**,

owned by Salvador division, is located in the Chañaral bay. This marine zone consists mainly of benthic invertebrates and microalgae. The impact comes from the contamination caused by the introduction of substances associated to port activities. Monitoring program reports state this will not be a significant impact –or irreversible– as long as operations are carried out under the quality and safety standards established by the division.

The Ventanas division keeps surveillance plans periodically reported to the authority (DIRECTEMAR) giving account of the coastline state. Also, and according to Clean Production commitments (APL), a diagnosis study has been completed on the behavior of the Campiche water mirror/wetland and a comprehensive management plan has been developed with the aim to improve, preserve, and protect the biodiversity of the area.

Codelco has put in place programs and/or agreements entered into with universities, government agencies, and other organizations engaged in biodiversity conservation or protection initiatives.

With respect to our collaboration and partnership commitment to develop knowledge at national and local level, the Ventanas division collaborated in the completion of a diagnosis study where the state of land and marine ecosystems within the area of influence of the Puchuncaví-Quintero industrial complex was analyzed (PS “Mining: Partnerships for Development”).

**Outstanding case**

Ministro Hales division funded a research conducted in 2015 of project “Propagation and Growing of Species Living in Vega Sapunta”, conducted in a plant nursery located in Pampa Puno, the Antofagasta

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index



region altiplano. During the research, the species prevailing in the area were grown and carefully observed in relation to their natural habitat, growth characteristics, and reproduction structures, at an elevation gradient from 2500 to 4200 m. Among the successful reproduction results are species like *Adesmia erinacea*, *Astragalus arequipensis*, *Ephedra breana*, *Parastrephia lucida*, and *Senecio rosmarinus*.

### Mine site closures

Codelco defines mine site closures as a key integral part of the mining business strategic planning and, for that purpose, has implemented a mechanism through which corporate closure plans, can be prepared including closure criteria and measures as well as the valuation and constitution of financial collaterals.

### G4-MM10

Pursuant to Law N° 20.551 about mine sites and installations closure (hereinafter "the Law") and Supreme Decree N° 41 of 2012 from the Ministry of Mining, the National Copper Corporation - CODELCO, submitted to the National Service of Geology and Mining (SERNAGEOMIN) a closure plan for each of the eight corporate divisions.

The above plans were approved in 2015, on the dates and for amounts showed in the Table below:

Update of provisions per mine site closure			
División	Approval date	Sernageomin Resolution N°	Closure cost in UF
Ventanas	March 19 <sup>th</sup> , 2015	756	3,340,149
Radomiro Tomic	May 11 <sup>th</sup> , 2015	1290	10,385,450
Ministro Hales	May 14 <sup>th</sup> , 2015	1316	4,270,201
Chuquicamata	May 27 <sup>th</sup> , 2015	1425	31,567,848
Teniente	June 2 <sup>nd</sup> , 2015	1485	38,812,050
Gabriela Mistral	June 15 <sup>th</sup> , 2015	1600	3,632,838
Salvador	August 17 <sup>th</sup> , 2015	2080	12,534,924
Andina	November 3 <sup>rd</sup> , 2015	2777	18,725,048

Therefore, Codelco has in place duly approved and current closure plans for all its mine sites and facilities.



# CONTENTS

## 2015 SUSTAINABILITY REPORT

Message from our CEO

Sustainability-related commitments

Materiality process

Context and relevant facts

Our company

Corporate governance

Work performance

**Environment**

Community relations

Verification letter

ICMM

GRI Index

These closure plans were developed during the transitional arrangement of the Law applicable to those mine sites under operations by the time the Law was enacted in 2012. These must be updated according to the general arrangement when an important change takes place in any of the mine sites, or after 5 years (2020), as the maximum deadline prescribed by the Law.

### Whistleblowing and grievance system

#### G4-EN34

Codelco has in place a socio-environmental grievance and feedback system, consisting of a continuous listening platform, open to the communities living in the different sites where we operate. The system offers contact channels, as the toll-free telephone line 800222600, the website [www.codelco.com](http://www.codelco.com) and the email [contactosocioambiental@codelco.cl](mailto:contactosocioambiental@codelco.cl)

Codelco seeks to respond in a timely manner to the neighbor's concerns, inconveniences, and suggestions that may arise as a result of production processes or investment projects of the company. In 2015, we received 81 contacts through these channels, 17 of which involved environmental topics.

