Energy Management

Energy Consumption and Management

Energy is a strategic resource that must be managed in order to ensure a safe, efficient and sustainable supply for our operations, in accordance with our Climate Change Strategy. Energy represents approximately 18.9% of the total of operational costs of our mining operations. Of this percentage, about 10.4% corresponds to electricity and 8.5% to fuels, mainly diesel.

In accordance with our Energy Policy framework, implemented in 2022, we have incorporated the role of Energy Management Representative at each mining site. They supervise the achievement of decarbonisation and energy goals through energy performance plans and GHG reduction. The role consists of leading and ensuring the implementation and improvement of the Energy Management System according to Chilean Law No. 21,305 on Energy Efficiency.

Our team consists of Energy Management Representatives at each mining site and one in the corporate area. Together they have decided to achieve compliance with the Energy Efficiency Law by implementing the ISO 50001 standard in each company. We are aware of and keen to comply with both legal requirements and voluntary commitments regarding energy use, consumption and efficiency.

Our approach to energy efficiency is incorporated into our operations, into each project design, and into the guidelines on acquiring products and services that may impact the energy performance of mining operations.

In 2023, we focused on ensuring a competitive energy supply for our Centinela Second Concentrator project, and we prioritised external verification in relation to energy management, such as renewable energy certificates (RENOVA and IREC)[1]. We also continued reviewing our contracts with our power companies, in order to guarantee a supply of exclusively renewable energy, taking advantage of the abundant solar and wind energy available in Chile.

The competitive prices of renewable energy in Chile have enabled the evaluation of the decarbonisation or energy transition plan for our processes; however, the amount of energy required would be challenging for the current electrical infrastructure. Considering this, the development of energy efficiency initiatives that allow us to reduce the energy consumption of our current processes, as well as the required electrical infrastructure becomes a critical enabler. Our short-term strategy is focused on the renewal of key electric motor and pumps associated with our water and grinding processes with new technologies that allow us to reduce energy consumption and make the overall process more efficient.

For further information on GRI 302-1, 302-3, 302-4, 305-6 and 305-7, please refer to our 2023 Sustainability Databook.

Antucoya plant worker

Fuel Consumption

13,508

2022: 15,729 TJ

Variation %: 14%

Electricity Consumption

3,389

2022: 3,295 GWh

Variation %: 3%

1. RENOVA is coordinated by the Chilean Ministry of Energy, and IREC is an international standard for the issue, tracking, commercialisation and exchange of renewable energy certificates.

Water Stewardship

Water Stewardship

GRI 3-3, 303-1

In 2023, in acknowledgement of the strategic value of water for our company and our own sustainability, we created the Water Resources Management area to improve technical advice and our role in planning. We also assigned a water lead expert at each mining site to improve water management and to increase water efficiency.

As part of the third pillar of our Climate Change Strategy, water stewardship has become a critical aspect of our operations due to the nature and geographical location of our mining activities. All of our mining companies are located in water-stressed areas. Three of our four mining operations are in the Atacama Desert, and the fourth, Los Pelambres, is situated in the Choapa Valley, an area suffering a severe drought.

Our assignment of water leads in each company is intended to improve our governance, recognising a steady development of internal skills over the last two years in this domain. Considered a milestone in our water policy, this new governance structure allows the incorporation of decisions on water use into new projects and the standardisation of processes.

Our water leads are promoting a cultural change based on water stewardship at each company. Our objective is to keep working to strengthen the Group's expertise in water management. With the purpose of safeguarding the availability of water resources within our operations, communities and the environment, we implement practices aligned with the Water Stewardship Framework of the International Council on Mining and Metals (ICMM).

At the operational level, we understand the relevance of compliance, so we prioritise water management to avoid risks that, if not properly treated, may lead to contaminant leaks, harm to communities, or difficulties in obtaining environmental permits. In doing so, we constantly improve the quality of our information and maintain a close relationship with surrounding communities.

As a company, we are intensifying efforts to protect limited freshwater resources in the communities in which we operate. We work hard alongside communities and the authorities to define the future use of their water rights with sustainability as a key objective (see Our Work with Communities section). We promote transparency through quantitative information in our Sustainability Databook, sustainable and responsible environmental water management, and the water safety of our communities.

Our Approach

Evolution of the water matrix	Efficiency, recirculation and reuse measures	Procedure
Strengthen the strategy for reducing use of continental water in areas where water is scarce, establishing targets and actions based on climate scenario analysis results.	Strengthen efficiency in the use of water and other strategic resources, improving their recirculation, recovery, reuse, and protection in the company's areas of influence.	Guidance for compliance with the Water Policy's commitments and the requirements established in the Water Management Standard.

According to our Water Policy and Climate Change Strategy, each Company must have a Water Efficiency and Implementation of New Technologies Plan in place. The objective is to promote the efficient use of water resources from continental sources, seawater or other alternative sources, analysing water use indicators and promoting the implementation of industry best practices. Since 2022, all of our mining sites have a water efficiency plan. In 2023, we set a goal that all Group companies should achieve at least 70% of the water management standard. By the end of 2023, progress in implementation of the standard had reached 80% as a Mining Group. In addition, two water efficiency pilot projects were approved to increase water recovery from tailings at Centinela and Los Pelambres.

For more information on GRI 303-1 and 303-2, please visit the 2023 Sustainability Databook, ICMM Water Commitments sheet.

Water Policy

Water Management Standard

Water Resources Procedure

Our Pillars

Water Policy

Increase water efficiency in our operations

We are committed to progressively reducing water use per tonne of copper produced and seeking multiple alternative sources of water supply.

Apply robust and transparent water governance

We use consistent industry metrics and widely accepted approaches to report our water management performance.

Cooperate for environmentally responsible, sustainable water management

We work with local communities to cooperate in the management of their water needs, contributing to enhanced water security.

Water Management Standard

Defines the minimum requirements that allow Antofagasta Minerals and its mining operations to ensure a safe, economical, efficient and sustainable water supply throughout the entire lifecycle of a site. It covers the exploration, design, operation and closure phases, along with development projects.

Water Resources Procedure

Technical reference document detailing best practices and recommendations.

Provides guidance for compliance with Water Policy commitments and the requirements established in the Water Management Standard.

Leading Seawater Use

Our 2023 achievement	Our goal
60% of our Group's water withdrawals was seawater.	**90%+** of the water used by our operations should be seawater and recirculated once our desalination plant at Los Pelambres reaches its full capacity of 800 l/s.

Antofagasta Minerals has long been a pioneer of the use of seawater in the Chilean mining industry. We are moving away from dependence on continental water sources and increasing seawater use. In 2023, we achieved two milestones: completion of the Los Pelambres desalination plant as the first of its type in central Chile, and operations at Centinela only use 100%[1] seawater.

The Los Pelambres desalination plant has a production capacity of 400 l/s of industrial-quality desalinated water. The plant is located at the Los Pelambres industrial facilities at the Port of Punta Chungo in Los Vilos district, Coquimbo region. It includes marine works for capturing seawater and discharging brine, and an underground drive system stretching 61 km to convey desalinated water between the pumping station and the existing recirculation station at the El Mauro Tailings industrial area, before continuing to the mining site in Chacay.

In October 2023, the environmental authority approved doubling the capacity of the desalination plant to 800 l/s and building a new copper concentrate transportation system. The project also involves the construction of a new grinding line and a new flotation line at the Piuquenes Plant, located at the Los Pelambres production facilities.

The Centinela Second Concentrator project, approved by our Board of Directors in December, will also use seawater in its operations.

Following two years of work, Centinela began full operation using seawater in 2023. This milestone brought to an end a small remaining extraction of water from wells in Calama.

In a challenging operation, the water is transported along a 145-kilometer aqueduct to the mining site, which is located at 2,200 meters above sea level in Sierra Gorda district, Antofagasta region. The company requires approximately 900 L/s.

For further information on operational water extraction by source (2019-23), Mining division, as well as responses to the series of GRI 303-1 to GRI 303-5 standards, please refer to our 2023 Sustainability Databook.

1. In 2023, seawater accounted for 60% of our water withdrawal, led by Antucoya at 97% and Centinela at 85%. Due to ICMM reporting requirements, moisture which is held in ore and pit dewatering is included in the water withdrawals.

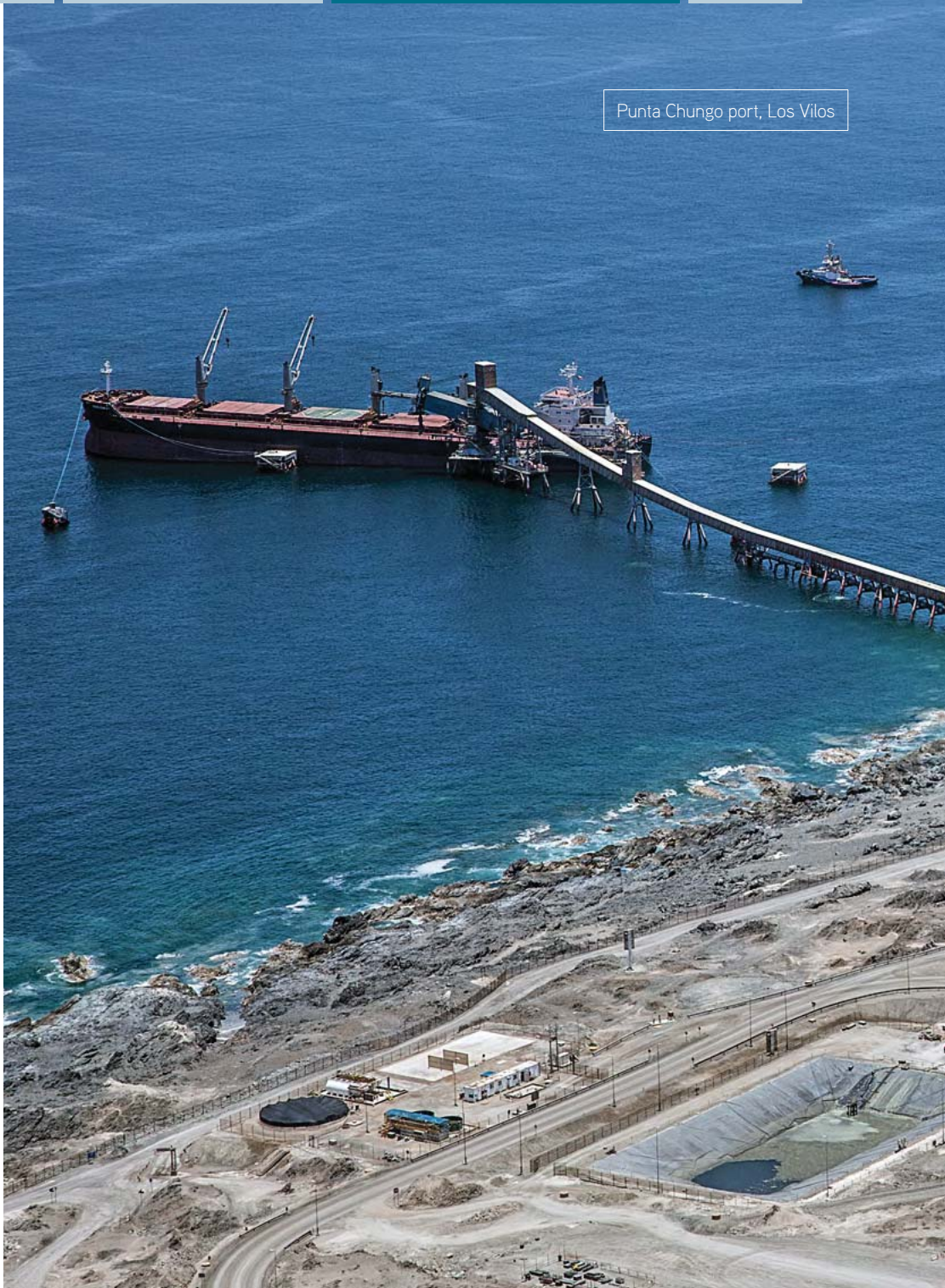
Operational water[1] withdrawals by source, 2019-23, Mining division (megaliters)

GRI 303-3

		2023	2022	2021	2020	2019
Los Pelambres	**Total**	**38,807**	**29,350**	**26,818**	**27,847**	**21,633**
	Seawater	13,044	0	0	0	0
	Surface water	15,188	20,093[2]	15,790	19,481	13,898
	Groundwater	10,568	9,249	11,019	8,358	7,726
	Supplied by third parties	7	9	9	9	9
Centinela	**Total**	**30,520**	**30,902**	**29,223**	**27,178**	**26,369**
	Seawater	28,961	26,762[2]	25,251	23,316	22,602
	Groundwater	1,560	4,140	3,973	3,862	3,356
	Supplied by third parties	–	–	–	–	410
Antucoya	**Total**	**7,081**	**6,521**	**6,316**	**5,923**	**5,804**
	Seawater	6,840	6,299[2]	6,081	5,720	5,623
	Groundwater	241	221	235	204	181
Zaldívar	**Total**	**5,502**	**5,993**	**6,653**	**7,015**	**7,015**
	Groundwater	5,502	5,993	6,653	7,015	7,015
Mining division	**Total**	**81,910**	**72,766**	**69,010**	**67,963**	**60,821**
	Seawater	48,845	33,061	31,332	29,036	28,225
	Surface water	15,188	20,093	15,790	19,481	13,898
	Groundwater	17,871	19,603	21,879	19,438	18,279
	Supplied by third parties	7	9	9	9	419
	Seawater as a percentage of total	60%	45%	45%	43%	46%

1. As defined by the ICMM, operational water is the volume of water used in operational tasks. Operational water use is, therefore, the actual volume of water required or used to sustain operational activities.
2. Water withdrawal increased as precipitation in Los Pelambres tripled in 2022 from the low levels in 2021, and Centinela Concentrates and Antucoya achieved record annual throughput.

For further information on GRI 303, please visit the 2023 Sustainability Databook, ICMM Water Commitments, ICMM Water-MD and ICMM Water – MD Operations sheets.



Punta Chungo port, Los Vilos