

MINING IN NUMBERS





The figures in this book were obtained from the most recent information available at the time of its edition (June 2017). In cases where we consider that the most recent figure was not representative of the reality of the industry, we used the average of the last 5 periods.



CONSEJO

MINERO

The Consejo Minero (Mining Council) presents Mining in Numbers, a book that provides the key figures of the mining industry in Chile in a different, simple and enjoyable way.

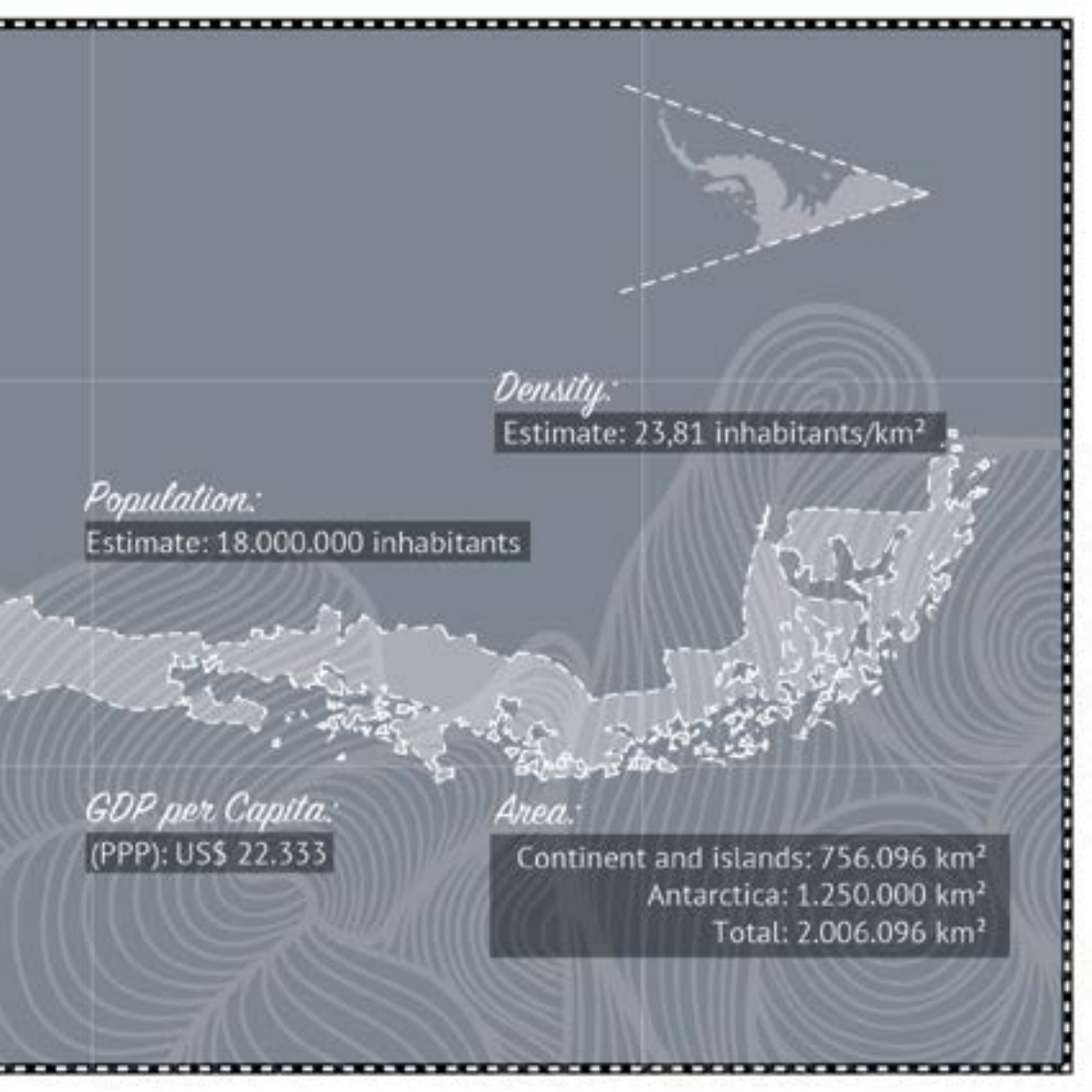


Chile

A stylized map of Chile is centered on a dark gray background with a grid. The map is light gray with a dashed outline. Above the map is a white sun with rays. Below the map is a compass rose with the letter 'N' to its left. To the right of the map, there are labels for 'Currency: Chilean Peso' and 'Capital: Santiago' with an arrow pointing to a dot on the map. The entire image is framed by a black border with a white dashed line.

Currency:
Chilean Peso

Capital:
Santiago



Density:

Estimate: 23,81 inhabitants/km²

Population:

Estimate: 18.000.000 inhabitants

GDP per Capita:

(PPP): US\$ 22.333

Area:

Continent and islands: 756.096 km²

Antarctica: 1.250.000 km²

Total: 2.006.096 km²



TARAPACÁ

ANTOFAGASTA

ATACAMA

COQUIMBO

VALPARAÍSO
METROPOLITANA
O'HIGGINS

*Large-scale mining
is located in 7 regions*

In 1870
Chile becomes
the
**#1 exporter
of copper**
in the world

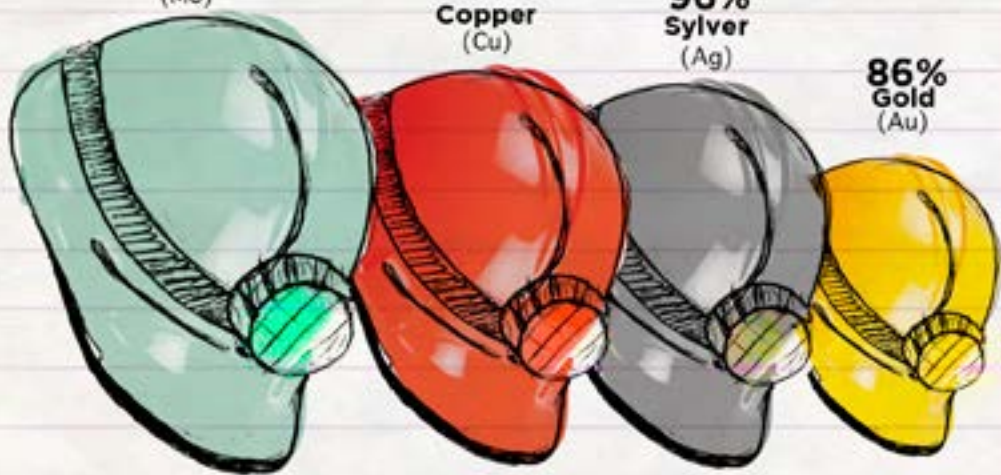
Share of large-scale
companies in mining
production in Chile

100%
Molybdenum
(Mo)

97%
Copper
(Cu)

96%
Silver
(Ag)

86%
Gold
(Au)

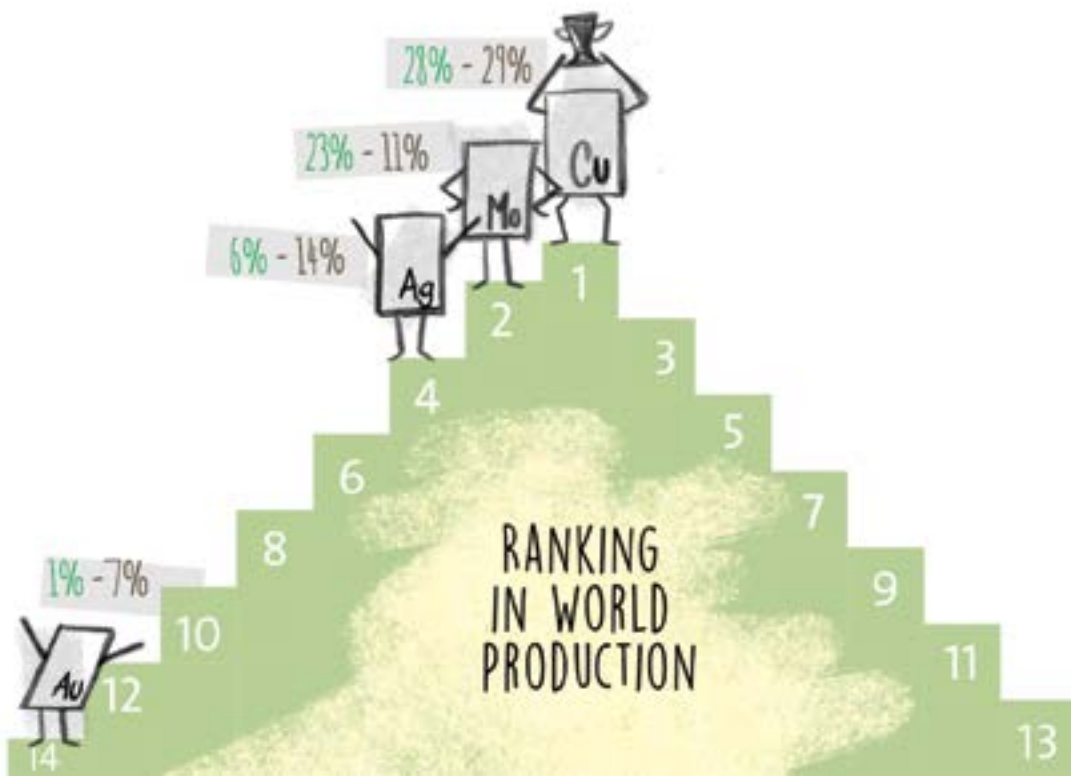


CHILE IS LEADER



SHARE OF WORLD PRODUCTION

SHARE OF WORLD RESERVES



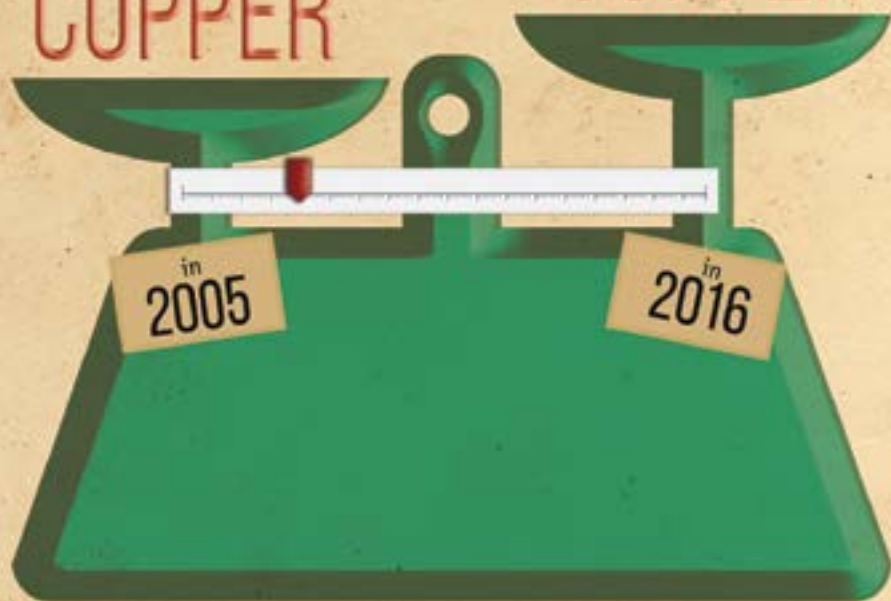
COPPER PRODUCTION IN CHILE



Out of each ton of processed
rock we extracted:

10 KG
COPPER

6 KG
COPPER



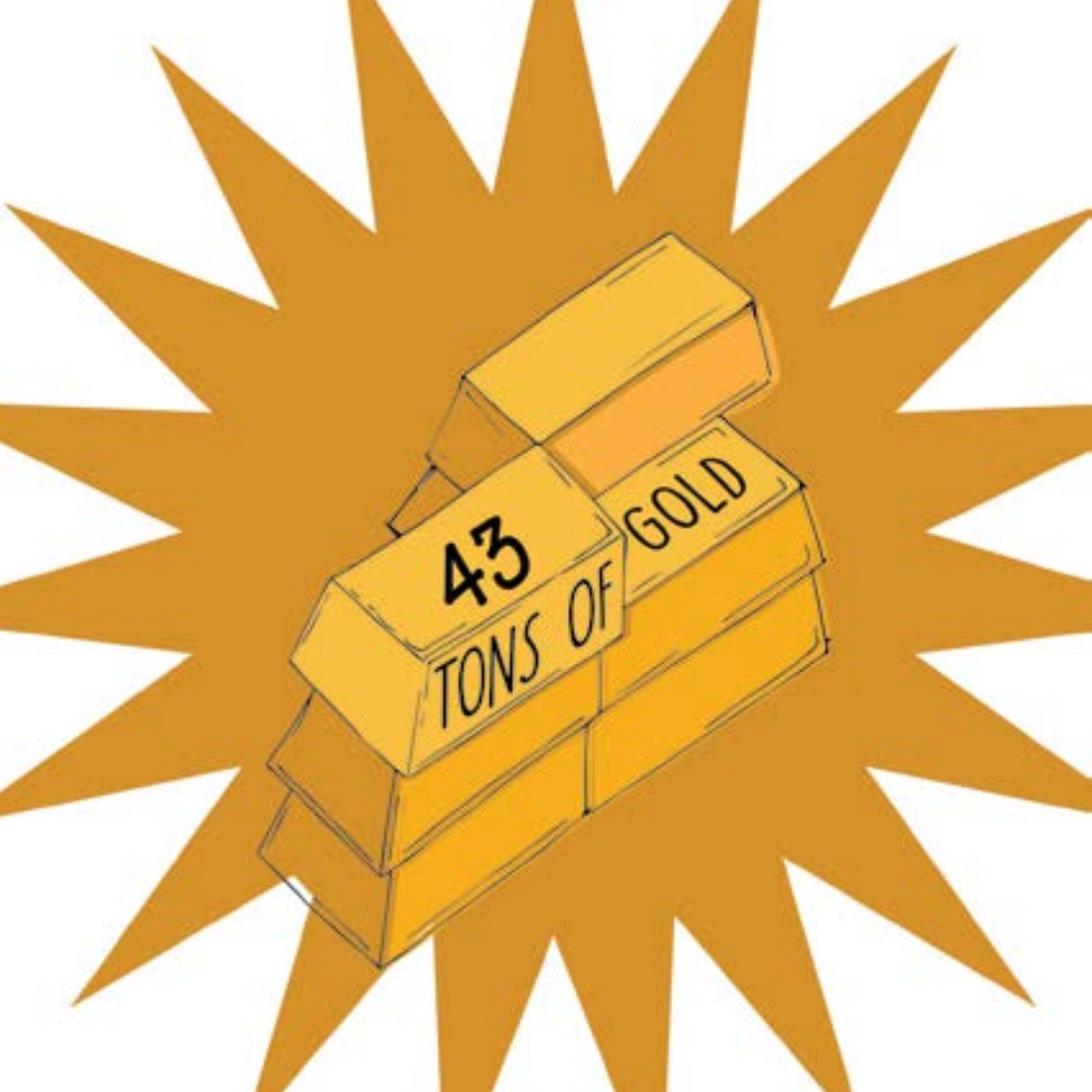


2016
PRODUCTION:

5.6 million tons of copper



56 thousand
tons of
Molybdenum



A large pyramid of silver bars, composed of many smaller bars stacked together, forming a triangular shape. The bars are light gray with darker gray shading to indicate depth and perspective. The pyramid is set against a dark gray background that curves upwards to the right.

1.497
TONS OF
SILVER

16.1
MILLION
TONS OF IRON

CAP Mining accounts for 99%.



Mining represents the

10 %
of the GDP



Contributes

48%

of the GDP in the Antofagasta Region



MINING CONTRIBUTES 1 OF EVERY 12 PESOS
COLLECTED BY THE STATE

95%
OF MINING COMPANIES REVENUES
ARE DISTRIBUTED AMONG:





7%

of the world's mineral
exploration is done in
Chile

In the last 5 years mining
has represented an average
of 36% of foreign
direct investment



China

is the largest consumer of

50%



31%



Mining represents
95%
of exports

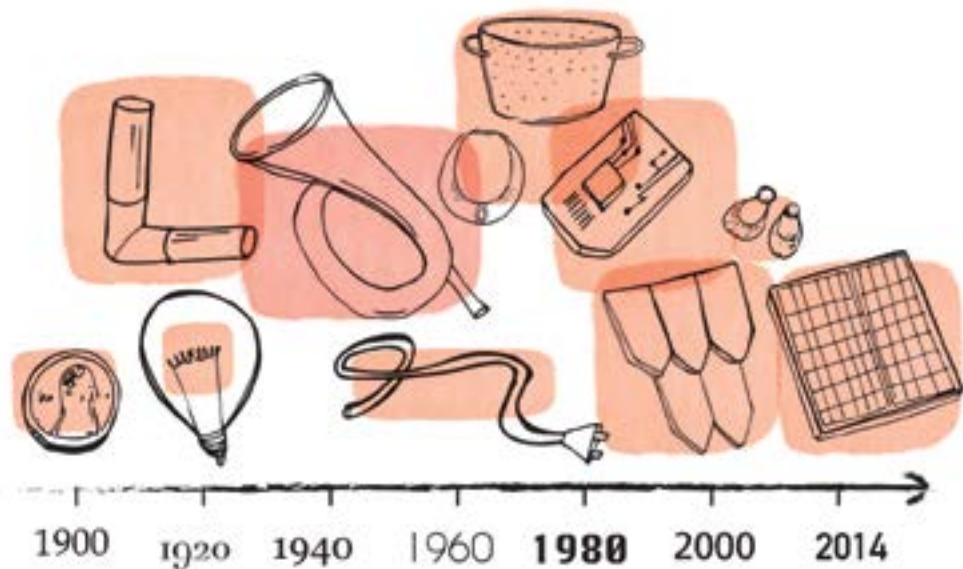
Iquique

of the

Tarapacá
Region

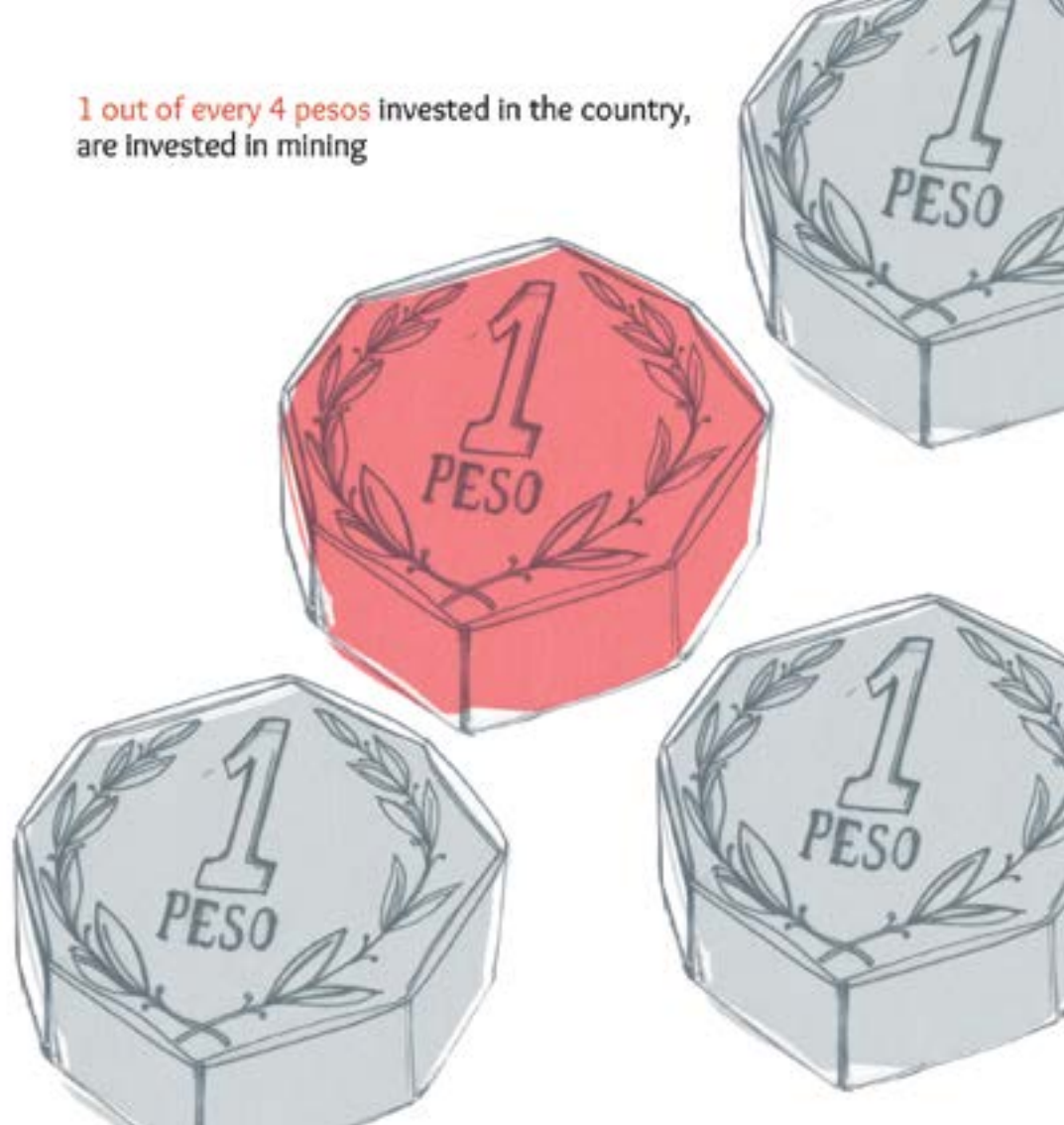
*MORE THAN 90% OF MINING EXPORTS
OF THE COUNTRY ARE COPPER*





**2/3 OF THE 550 MILLION TONS OF COPPER PRODUCED
SINCE 1900 ARE STILL IN PRODUCTIVE USE**

1 out of every 4 pesos invested in the country,
are invested in mining



Chile exports
copper in two
ways

55%



Refined

Mostly cathodes
that are 99.99%
pure copper

45%



Concentrate

that are
30% pure copper



More than

50%

of exports are mining products



27

ports operate
mining products



The discovery of Chañarcillo in
1832 produced an explosive growth
of silver production



Chile.

2005

Tax act.

Establishes a specific tax on
mining activities.

To this day it has collected
US\$7.000 million



USE OF COPPER AT THE WORLDWIDE LEVEL

30%

CONSTRUCTION

31%

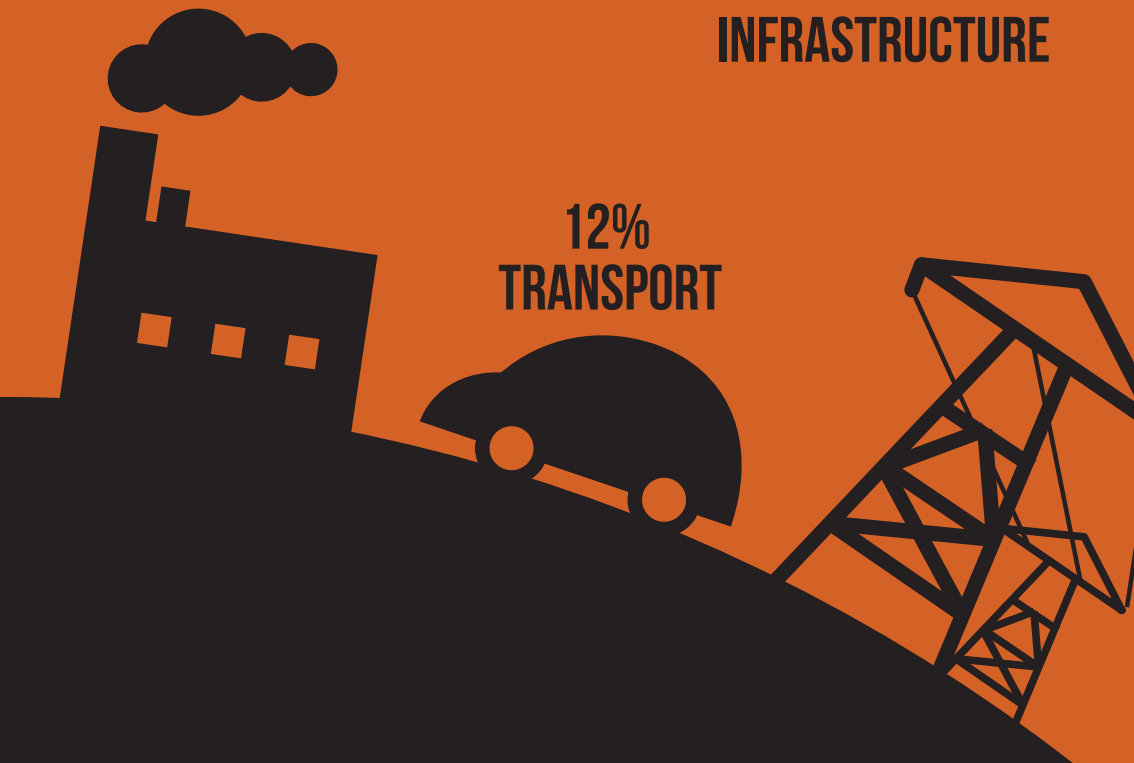
ELECTRONICS



12%
INDUSTRY

15%
INFRASTRUCTURE

12%
TRANSPORT





of copper is extracted from open pit mines

Chile has 5 sites declared as World
Heritage by Unesco. The mining city of Sewell
is one of them





A major challenge.

THE ANNUAL PRODUCTION OF
COPPER IN CHILE COULD GO FROM
5.6 MILLION TONS IN 2016 TO 7.2
MILLION TONS IN 2024 IF ALL
THE MINING PROJECTS IN THE
PIPELINE ARE EXECUTED

The development of a new mining project
can easily take





**THE MINISTRO HALES PROJECT
NEEDED TO OBTAIN**

645 PERMITS

IN ORDER TO START OPERATIONS



LARGE – SCALE MINING

MINING PROJECTS

HAVE AN AVERAGE LIFETIME OF 20 YEARS
AND A PRODUCTION OF

10 

TONS OF COOPER PER YEAR



THERE ARE

COPPER
SMELTERS

THERE ARE 3 COPPER
REFINERIES



Mining salaries are double
the average of the country





6 OUT of 10

the most important copper mines in the world are in Chile (Escondida, Collahuasi, El Teniente, Pelambres, Radomiro Tomic and Los Bronces).



MINING
DIRECTLY
CONTRIBUTES
3% OF THE
COUNTRY'S
EMPLOYMENT.

BUT IT IS
ESTIMATED THAT
FOR EACH
DIRECT EMPLOYEE,
2.55 INDIRECT
EMPLOYEES ARE
GENERATED. MINING
REPRESENTS 9% OF
TOTAL EMPLOYMENT



HELMET
WITH
HEADLAMP



SAFETY
SHOES



SAFETY
GLOVES



SAFETY
GLASSES



VENTILATOR



HEARING
PROTECTOR



SELF-
RESCUER



REFLECTIVE
SHIRT OR
JACKET

Mining requires
8 personal
protection
elements



*It has the lowest accident
rate per economic activity
1,5% v/s 4,7%
(the national average).*



The mining industry has seen an increase in production costs by 120% in the last 10 years.

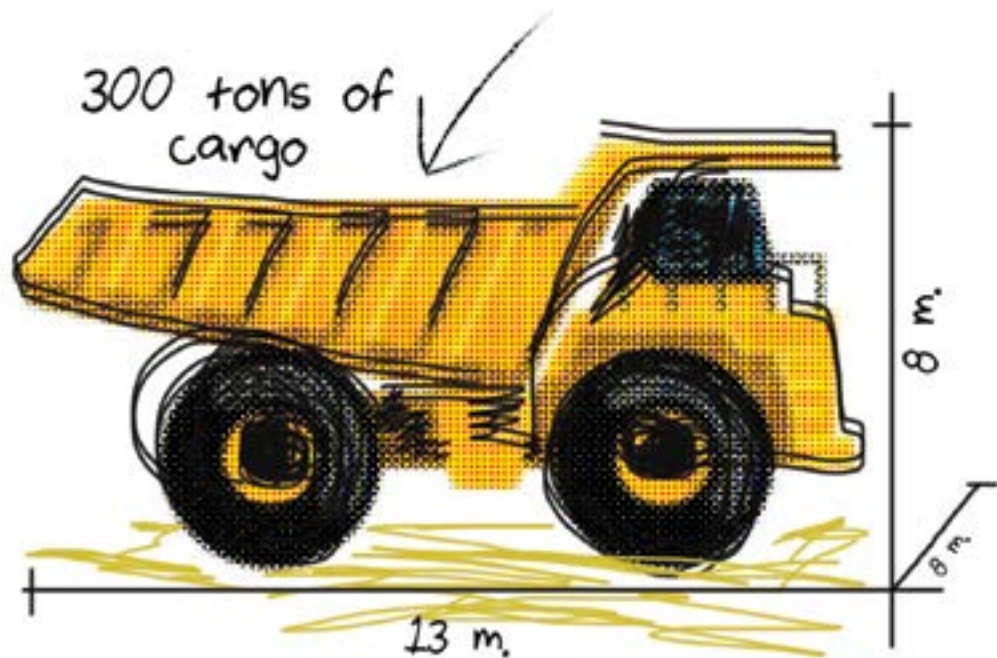


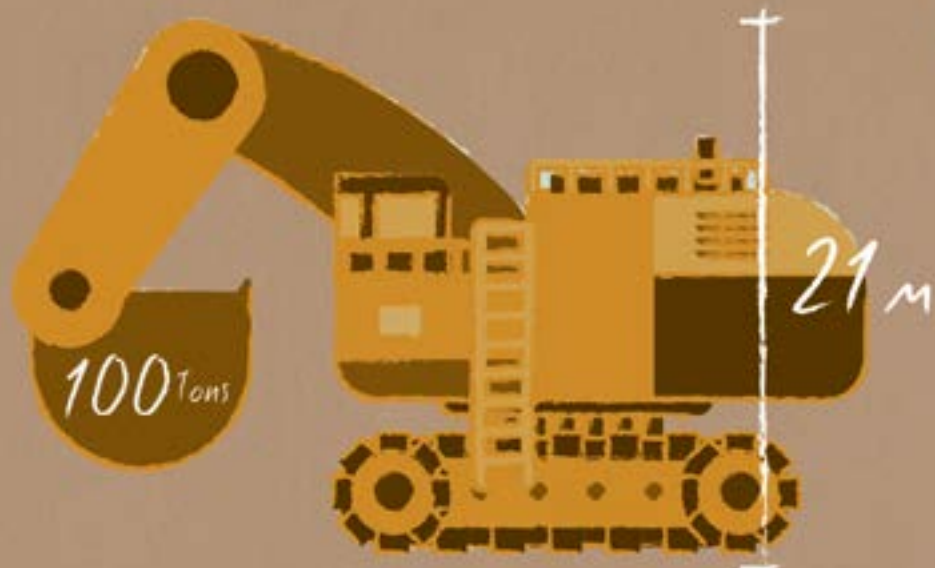
PER POUND OF COPPER

Women's participation
has steadily grown.
Today it reaches

7,9%

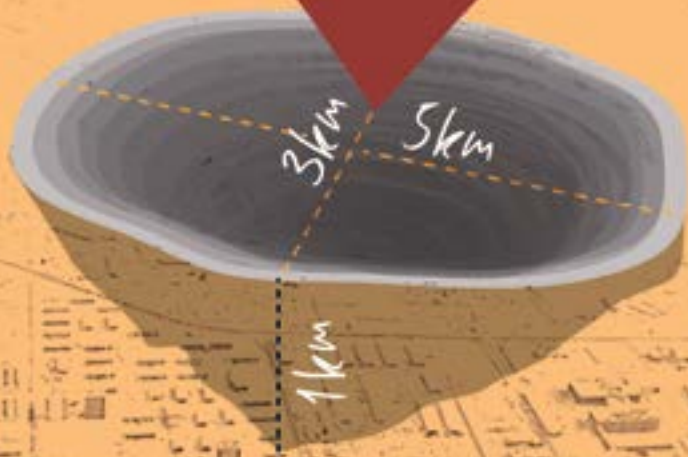






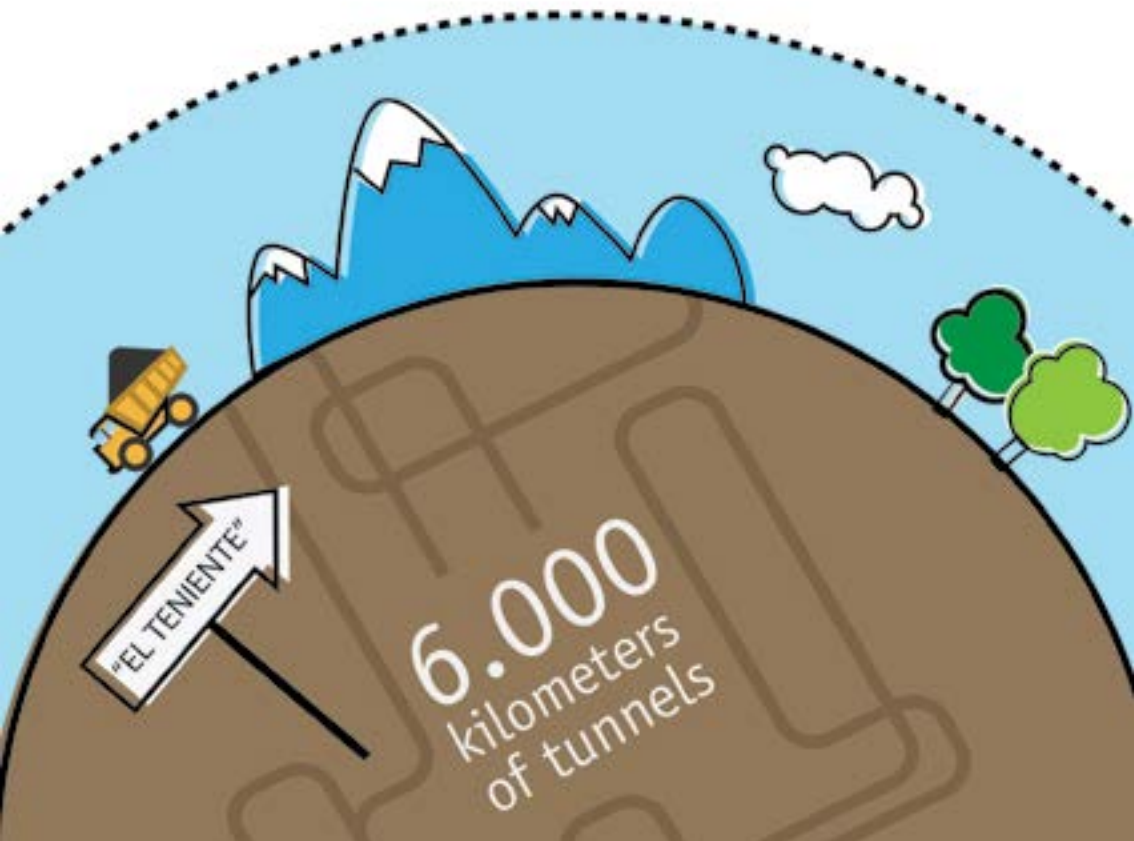
Electromechanical shovel
weights 1.000 tons

CHUQUICAMATA



IS THE LARGEST OPEN PIT MINE IN THE WORLD

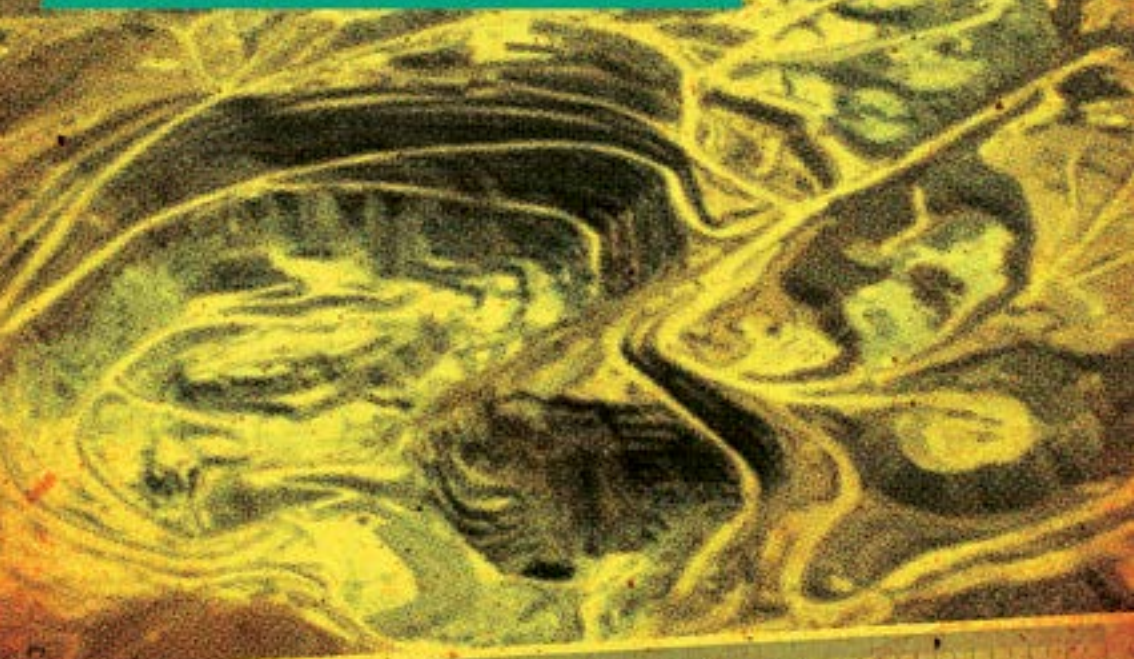
El Teniente is the largest underground mine in the world.
In a straight line its tunnels are equivalent to the distance
between Santiago and Lima



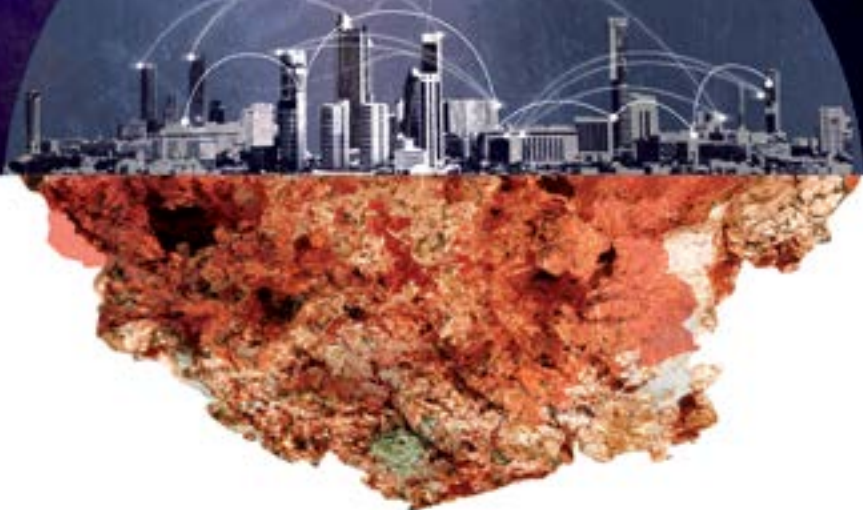


Caserones is the deposit located at the highest altitude: 4,600 meters above sea level

ESCONDIDA IS THE LARGEST
COPPER PRODUCING MINE.
IN 2016, IT PRODUCED
1,022,000 TONS



1/3



of the copper present in the world has already been processed



**In 25 years we will have to produce the
same as in the last 100 years due to
increasing consumption**

*Copper pipes in
buildings can last*

50

years

The Mining Ministry was founded
in 1953





OVER 70%
OF THE WORKERS
ARE UNIONIZED





*The 10th of August celebrates
San Lorenzo, patron saint of mining*



6.000

CHILEAN COMPANIES

**ARE MINNING
SUPPLIES.**

34%

of national supplier
companies export services
and products abroad

23%

of supplier

companies

have their headquarters in mining regions



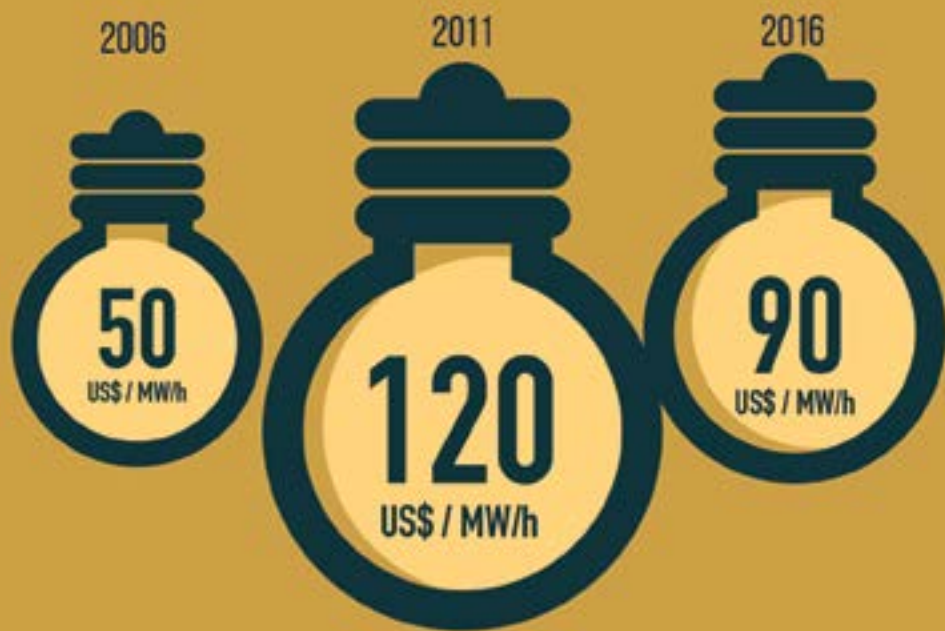
COPPER is
100%
RECYCLABLE





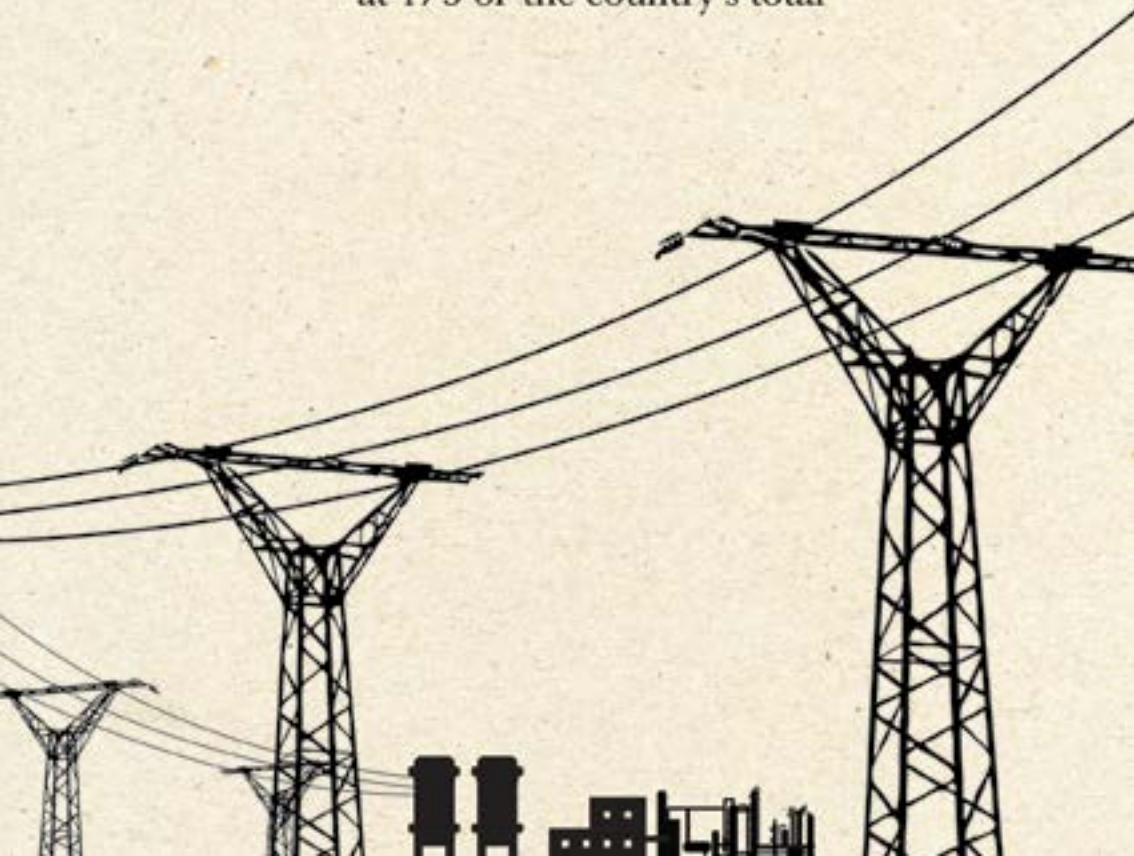
Approximately
9 million
TONS OF
copper
are recycled
each year

35% of the world copper demand is covered by recyclable material



Costs of electric energy for mining

Mining's electric consumption has remained
at 1/3 of the country's total



A COPPER
WIRE



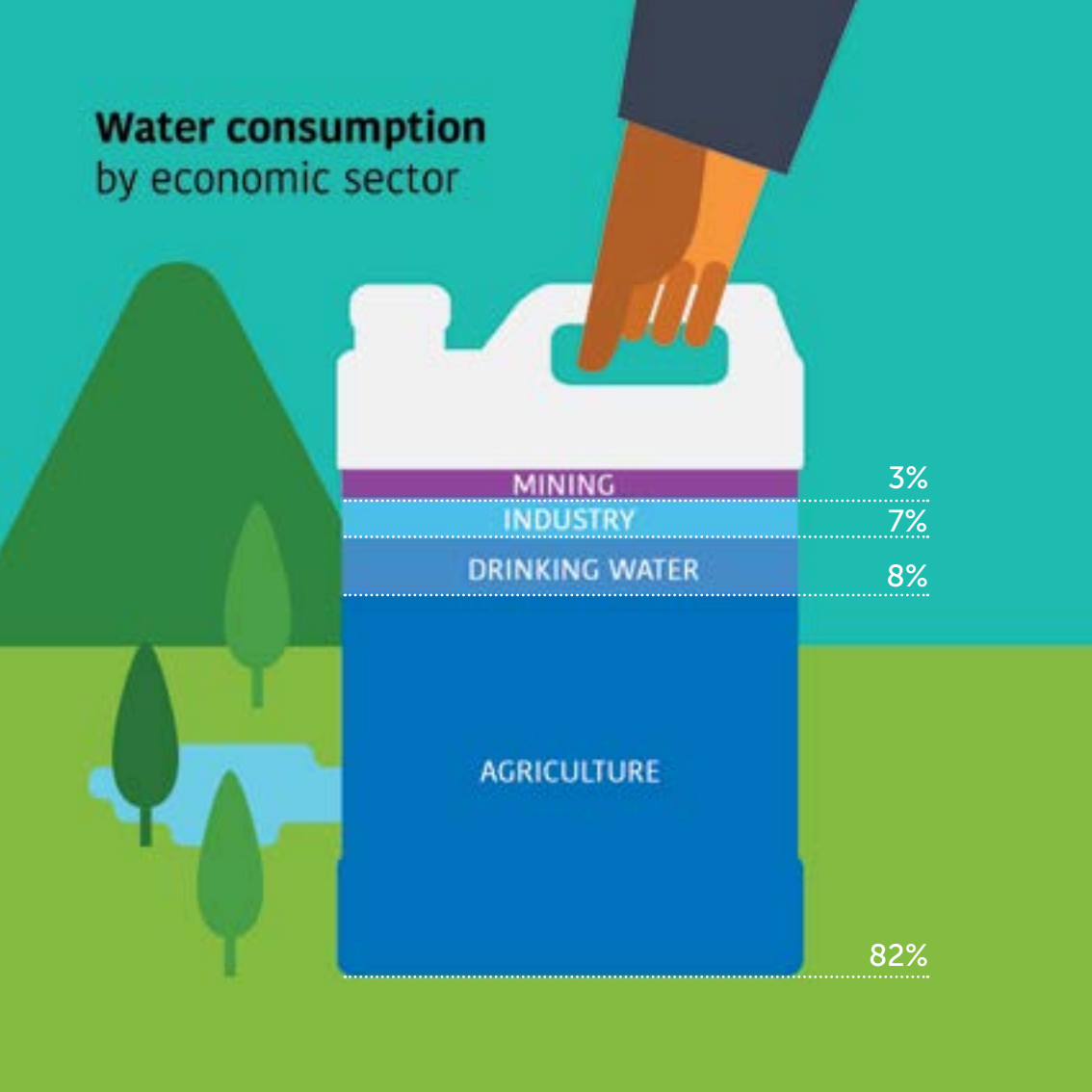
CONDUCTS ELECTRICITY

WITH 99.99%
EFFICIENCY



Copper conducts up to 8 times more heat
than other materials

Water consumption by economic sector



The mining water supply comes from:



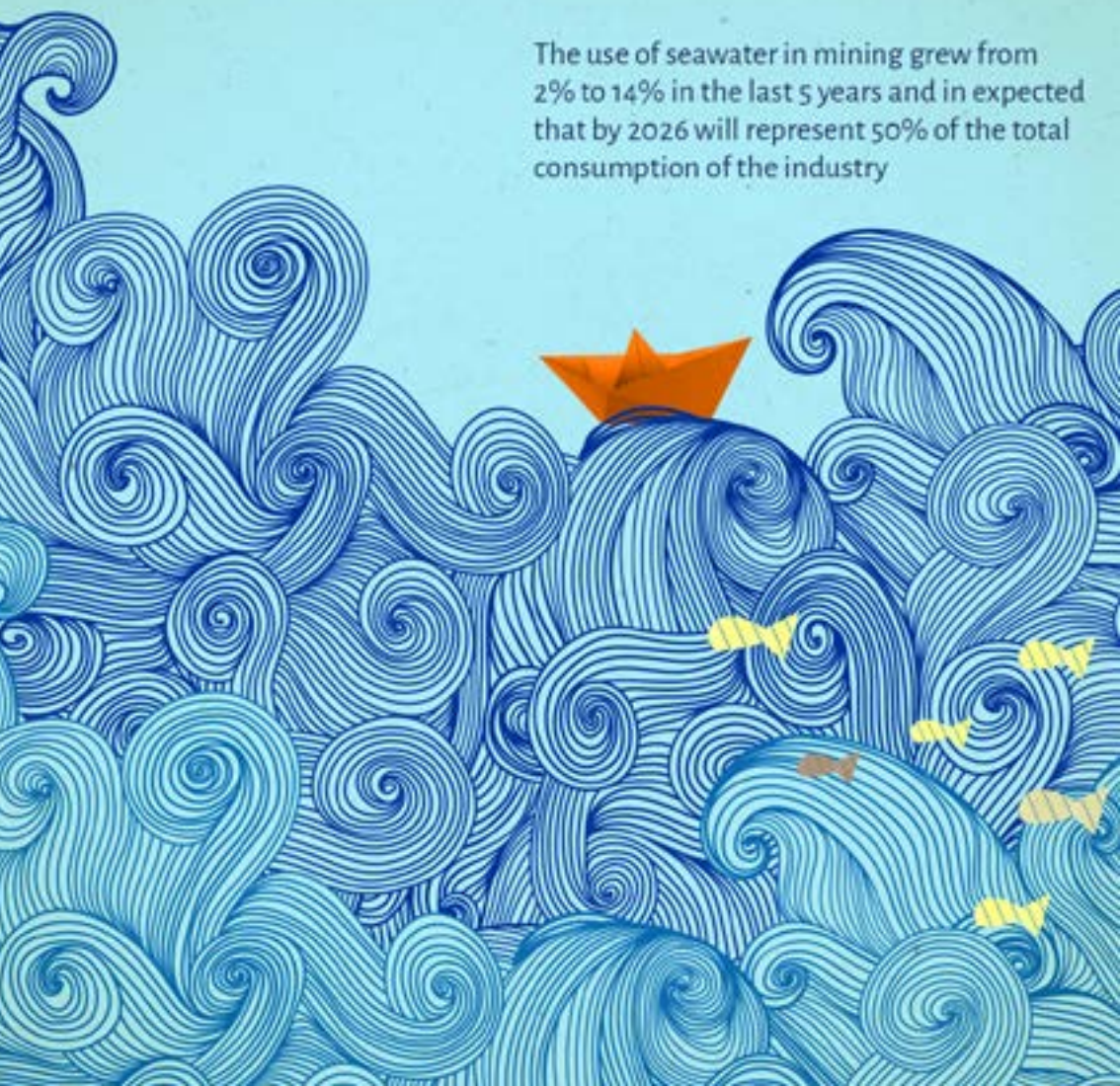


$\frac{1}{4}$
fresh
water

$\frac{3}{4}$

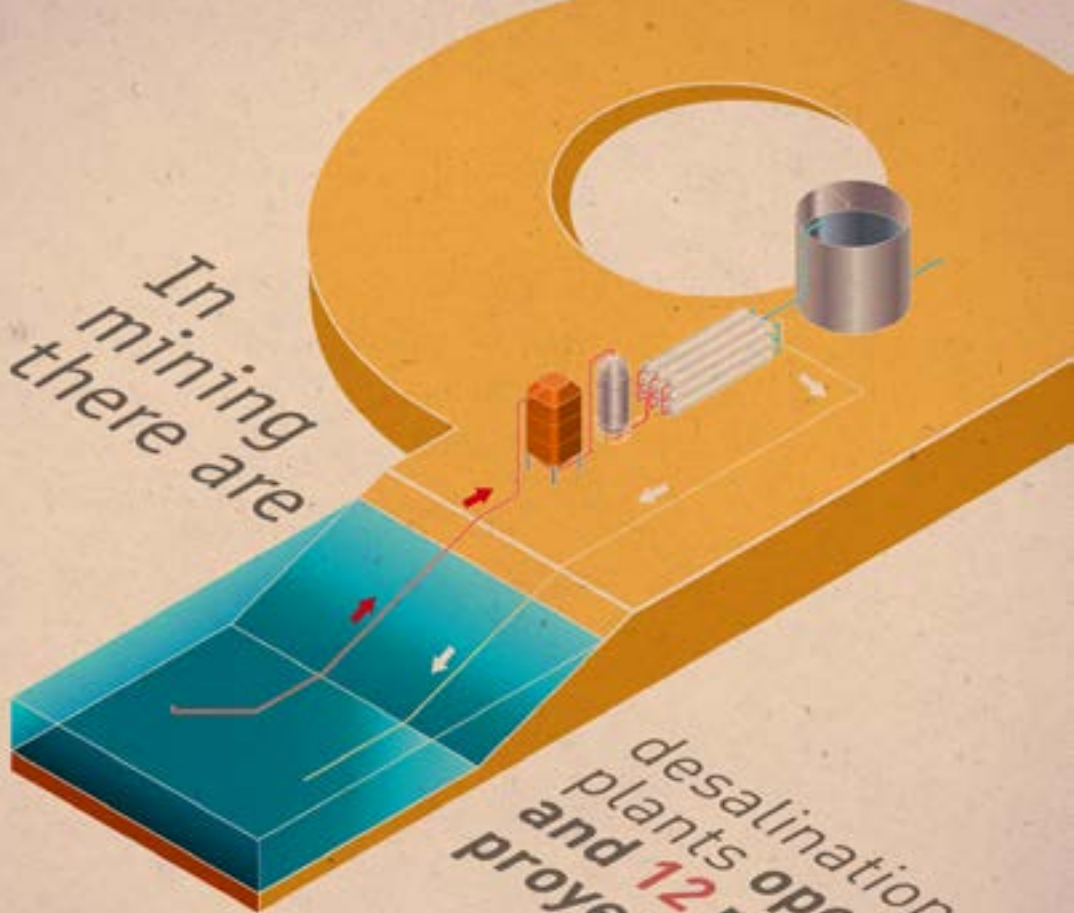
OF WATER USED IN MINING
PROCESSES IS RECIRCULATED
WATER

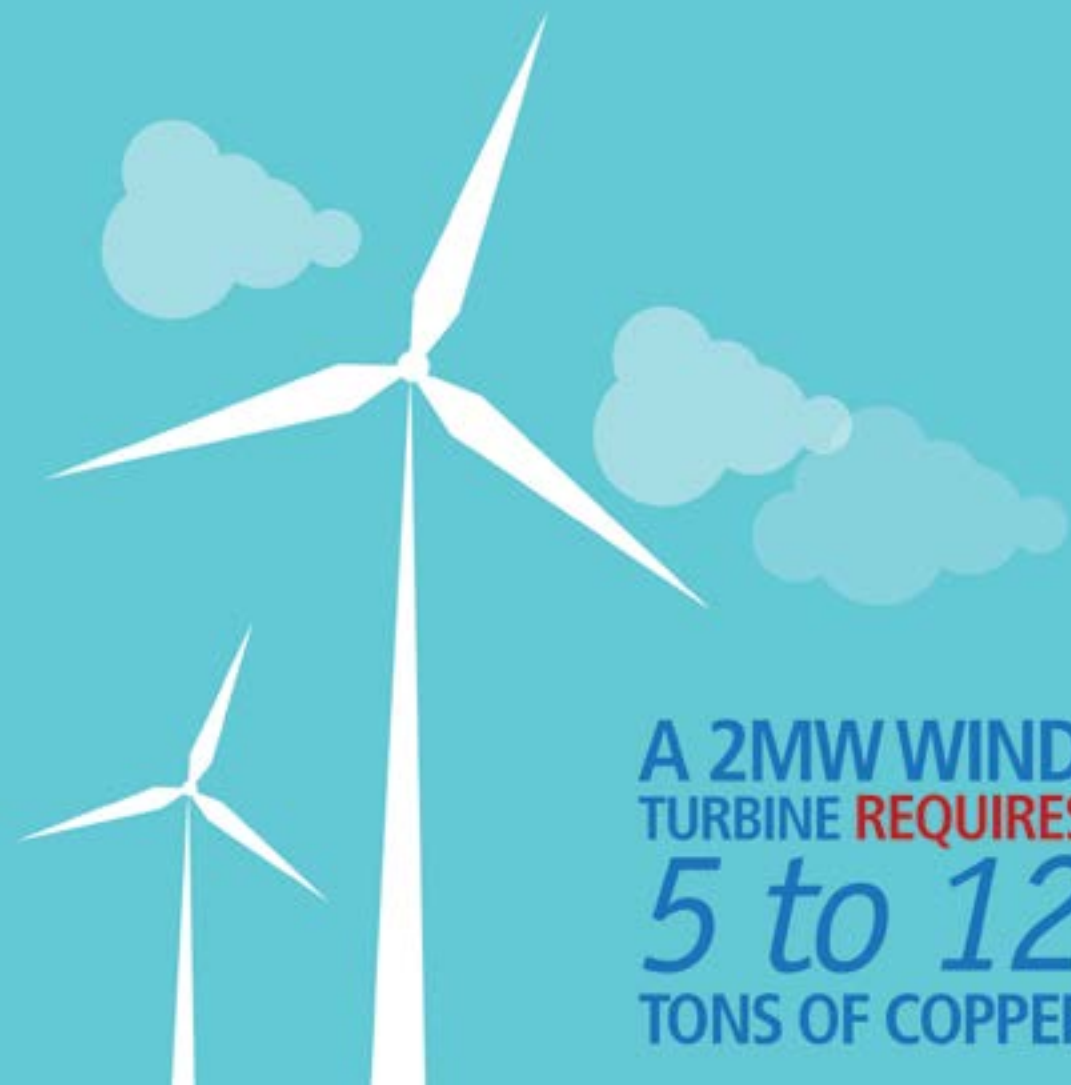
The use of seawater in mining grew from 2% to 14% in the last 5 years and is expected that by 2026 will represent 50% of the total consumption of the industry



In
mining
there are

desalination
plants operating
and **12** more
projected

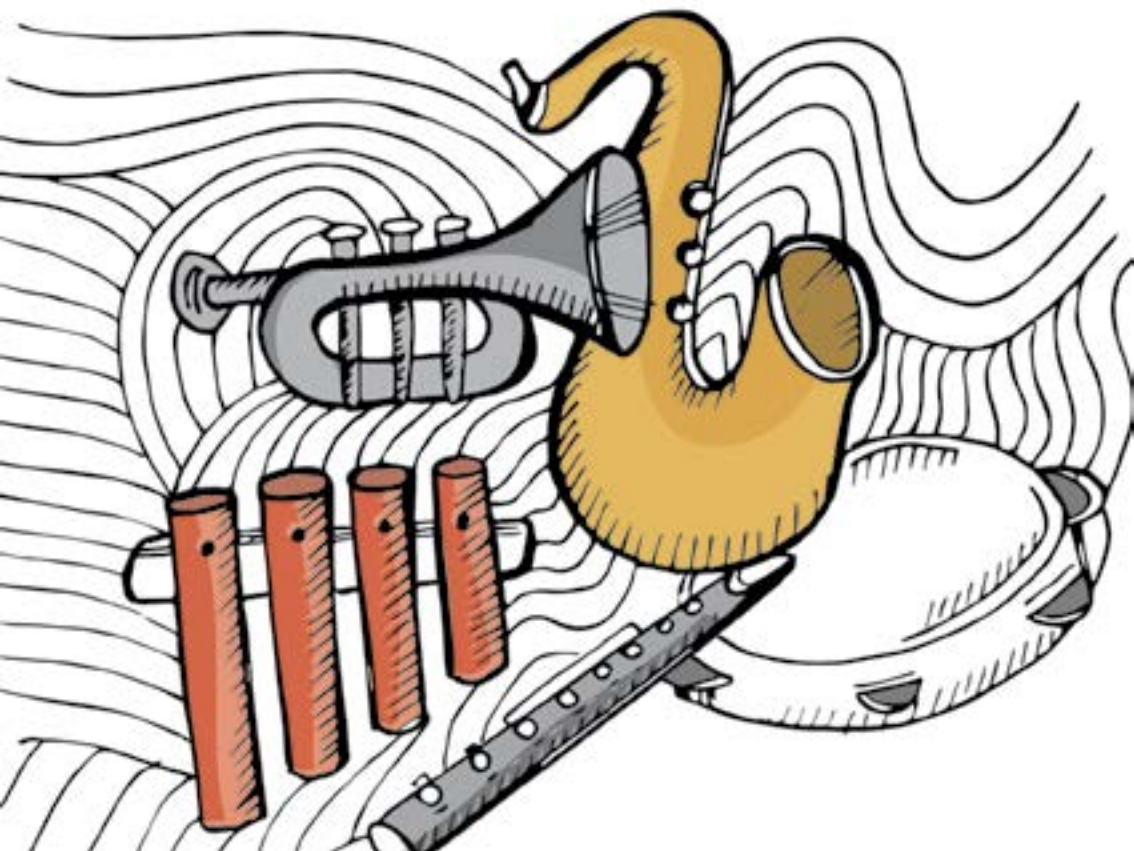




A 2MW WIND
TURBINE **REQUIRES**
5 to 12
TONS OF COPPER



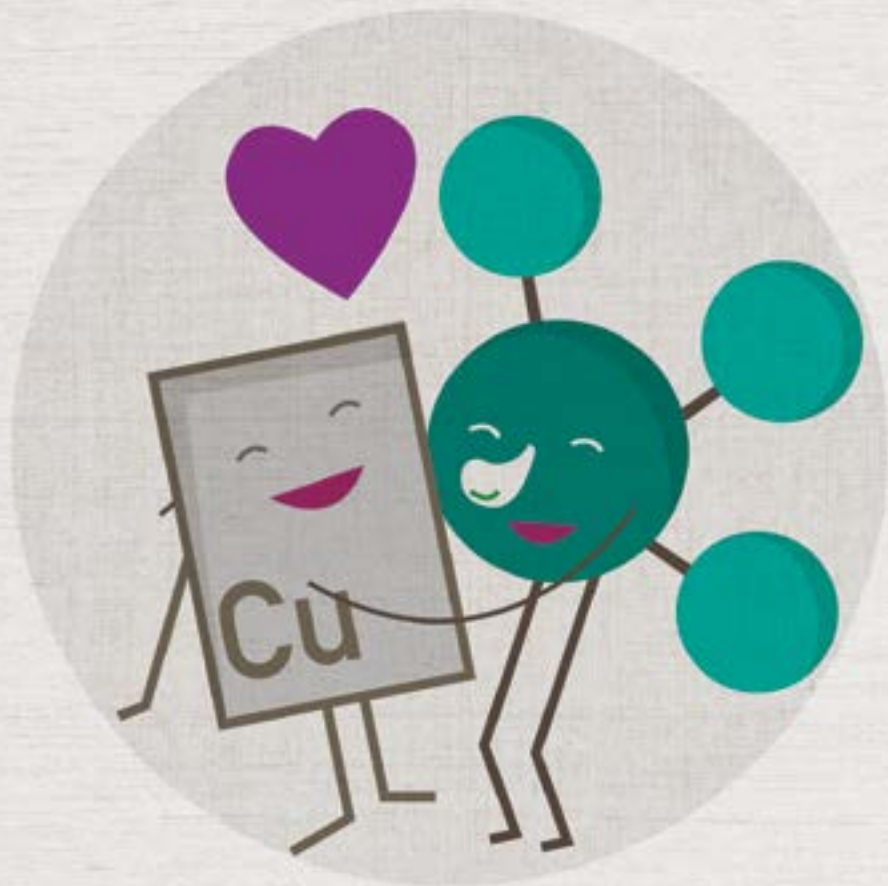
Most of the 80 instruments that form a symphony use copper, brass and bronze as raw material for production, providing great musical resonance.



TO PRODUCE A TELEPHONE



ARE NEEDED



There are at least 12 enzymes that need copper to perform their functions in the human body

An illustration of a surgical setting. A large, white, adjustable surgical light fixture is positioned on the left, with a circular head containing five yellow light bulbs. A wide, greenish-yellow cone of light projects from the fixture onto a red surgical table. On the table, within the light's cone, are several surgical instruments: a scalpel, a pair of long-handled scissors, a pair of forceps, and another pair of scissors. The background is a solid light blue.

Antimicrobial copper reduces up to
58% of hospital infections

*In Chile there are 4 hospitals that have
incorporated antimicrobial copper to
reduce infections*



The use of gold in catalytic converters helps to reduce pollutant emissions by 30%

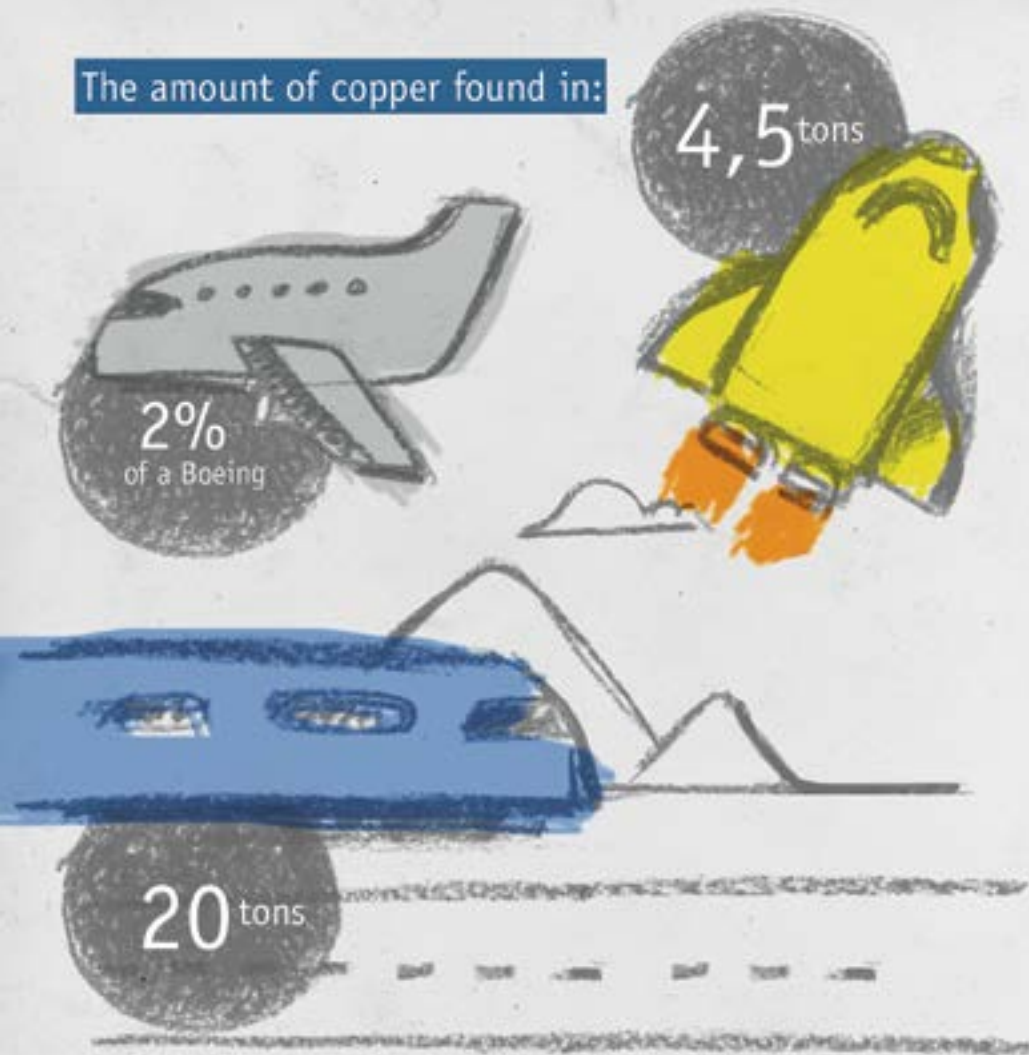


The amount of copper found in:

4,5 tons

2%
of a Boeing

20 tons



CONVENTIONAL
CAR

20
KILOS OF COPPER

C H I L E

HYBRID
CAR

38
KILOS OF COPPER

C H I L E

ELECTRIC
CAR

60
KILOS OF COPPER

C H I L E

IN THE GREAT MINING
ARE PERFORMED



hours of training for year,
which means that each
worker is trained on average
32 hours for year



AROUND **49**% of Gold

IS CONVERTED INTO Jewellery.
(THE MOST COMMON
USE of this metal)



OF GOLD IS FOUND IN AN OLYMPIC MEDAL



14

COMPANIES



PRODUCTION



Información a marzo de 2017
Fuente: Consejo Minero

KTMF/COPPER ▲

KTM/IRON ▲

OZ/GOLD ▲

ARICA ●

IQUIQUE ●

Cerro Colorado (74) ▲

Doña Inés de Collahuasi (507) ▲

Quebrada Blanca (35) ▲

Chuquicamata (302) ▲

Antucoya (66) ▲

El Abra (100) ▲

Radomiro Tomic (318) ▲

Ministro Hales (237) ▲

Sierra Gorda (94) ▲

CALAMA ●

Spence (167) ▲

Centinela (236) ▲

Altonorte ▲

ANTOFAGASTA ●

Gabriela Mistral (122) ▲

Lomas Bayas (80) ▲

Zaldívar (103) ▲

Escondida (1.022) ▲

Franke (21) ▲

Cerro Negro Norte (4.200) ▲

Salvador (60) ▲

COPIAPÓ ●

La Coipa ▲

Maricunga (175.532) ▲

Candelaria (135) ▲

Planta Magnetita (1.810) ▲

Los Colorados (9.568) ▲

Planta de Pellets (6.116) ▲

Ojos del Salado (25) ▲

Caserones (117) ▲

El Romeral (1.353) ▲

LA SERENA ●

Carmen de Andacollo (73) ▲

Altos de Punitaqui (7) ▲

Ventanas ▲

Chagres ▲

Los Bronces (307) ▲

VALPARAÍSO ●

Los Pelambres (355) ▲

El Soldado (47) ▲

Andina (193) ▲

SANTIAGO ●

RANCAGUA ●

El Teniente (475) ▲

Región
de Arica y
Parinacota

Región de
Tarapacá

Región de
Antofagasta

Región de
Atacama

Región de
Coquimbo

Región de
Valparaíso

Región
Metropolitana

Región del
Libertador
Bernardo O'Higgins

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Edition: Cecilia Valdés
Illustration and design: Cotee Santibáñez
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ISBN 978-956-8185-02-2
Printed in october.

Acknowledgments to: Imagen de Chile,
an expert institution in the country brand
management.

The Consejo Minero (Mining Council) is the association of the largest copper, gold, silver and molybdenum producing companies operating in Chile. They include national and foreign companies, both private and state owned.

Learn about more updated figures and discover the production process on our website: www.consejominero.cl

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