

# MINING INVESTMENT PORTFOLIO OF CHILE

**Baldo Prokurica**  
Minister of Mining

March 2019.



# CHILE, STRENGTHS FOR MINING INVESTMENT



# INVESTMENT IN MINING



# DEVELOPMENT OF ELECTRIC MOBILITY

## THE IMPORTANCE OF MINING

- Today, mining is the most important economic activity in Chile and for years it has been its main source of economic development. It also fosters progress and employment, bringing dynamism to other related and unrelated economic sectors.
- We are one of the main mining producers worldwide. Our geological virtues, mainly in copper and lithium, allows us to envision ourselves as a mining powerhouse for many years to come.

# CHILE IS A STABLE AND OPEN ECONOMY

Trade Agreements with 64 countries.



Macroeconomic Stability.

Chile was the first South American country to enter the OECD.

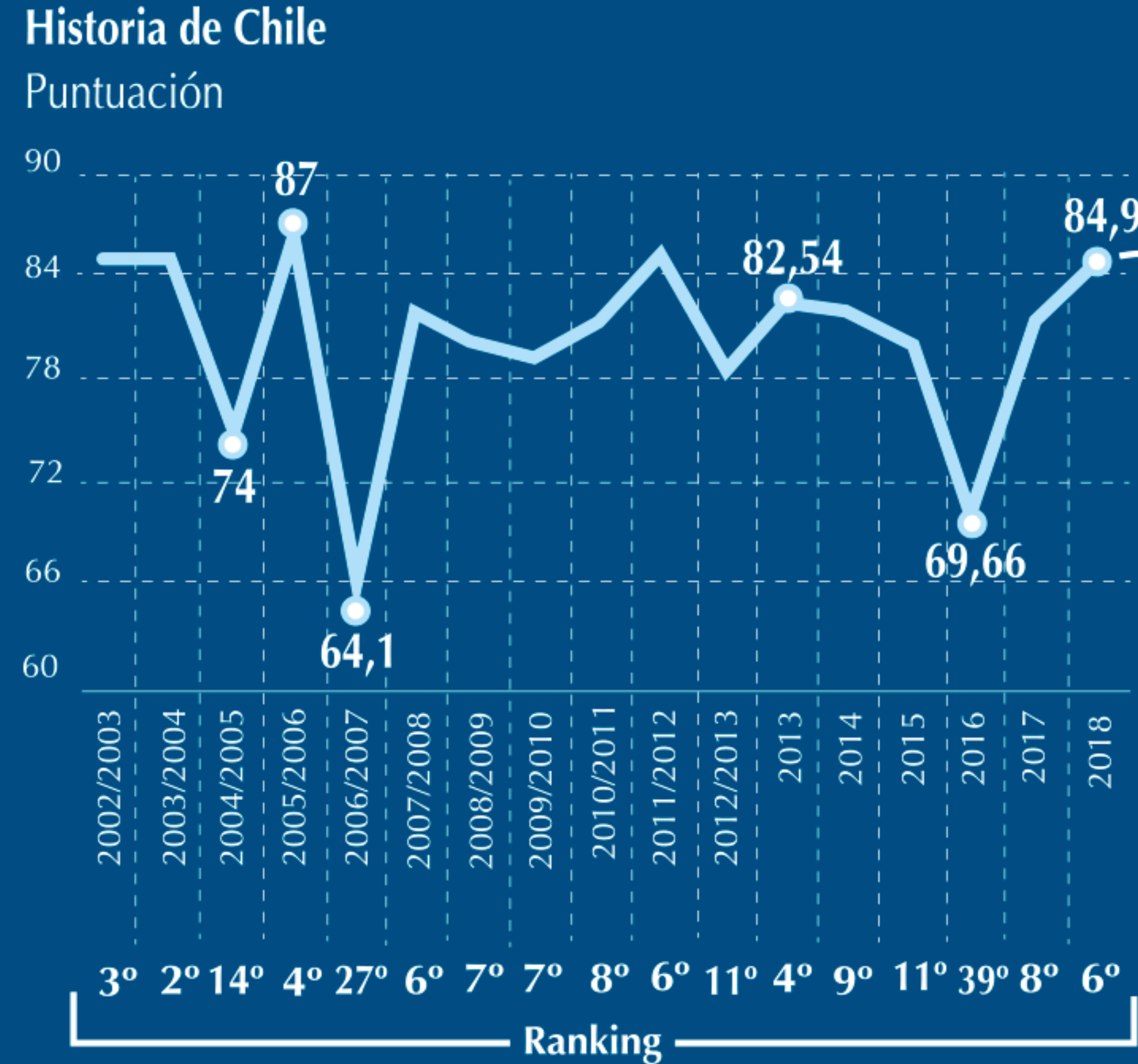
- Chile is connected with a diversity 85% of the World's of markets, reaching:
  - ✓ GDP.
  - ✓ 93,8% of export markets.
  - ✓ 65% of World's population.

# CHILE: FAVOURITE DESTINATION FOR INVESTING AND MINING EXPLORATION



CHILE LO HACEMOS TODOS

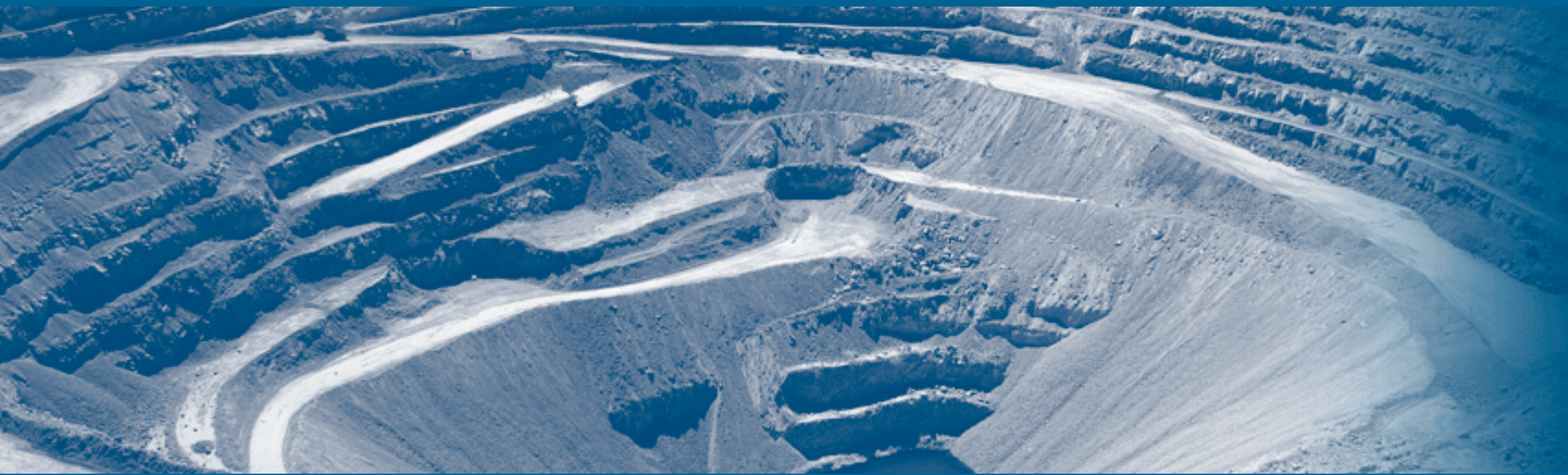
- Chile is one of the favourite destinations for mining investment and exploration.
- 2018's Fraser Institute Report placed Chile in a historic 6th place worldwide, between the most attractive destinations to invest in mining. We maintain a uncontested lead in Latin America.



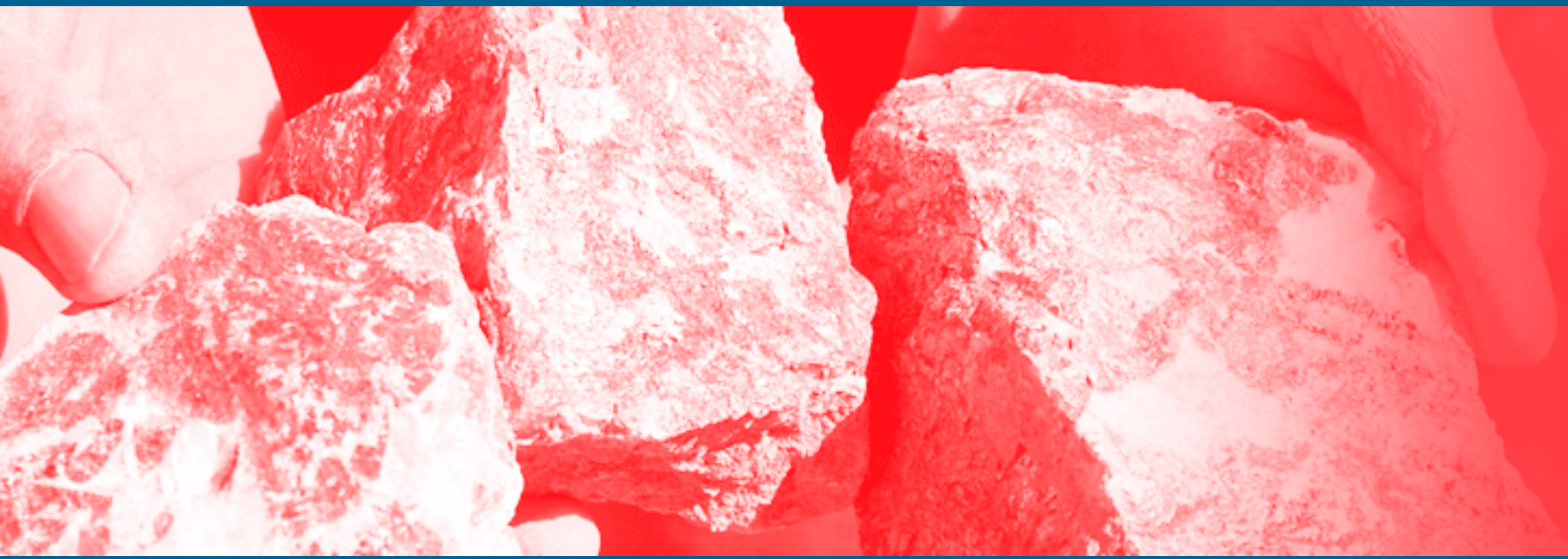
### Ranking 2018

Ran.	Región	Puntuación
1	Nevada (EE.UU.)	92,99
2	Australia Occidental	91,47
3	Saskatchewan (Canadá)	90
4	Quebec (Canadá)	88,38
5	Alaska (EE.UU.)	86,08
6	<b>Chile</b>	<b>84,9</b>
7	Utah (EE.UU.)	84,29
8	Arizona (EE.UU.)	83,94
9	Yukon (Canadá)	83,35
10	Territorios del noreste (Canadá)	82,46
11	Terranova y Labrador (Canadá)	82,14
12	Monitoba (Canadá)	81,78
13	Queensland (EE.UU.)	81,67
14	Perú	81,55
15	Nunavut (Canadá)	80,59

Source: Diario Pulso de La Tercera.



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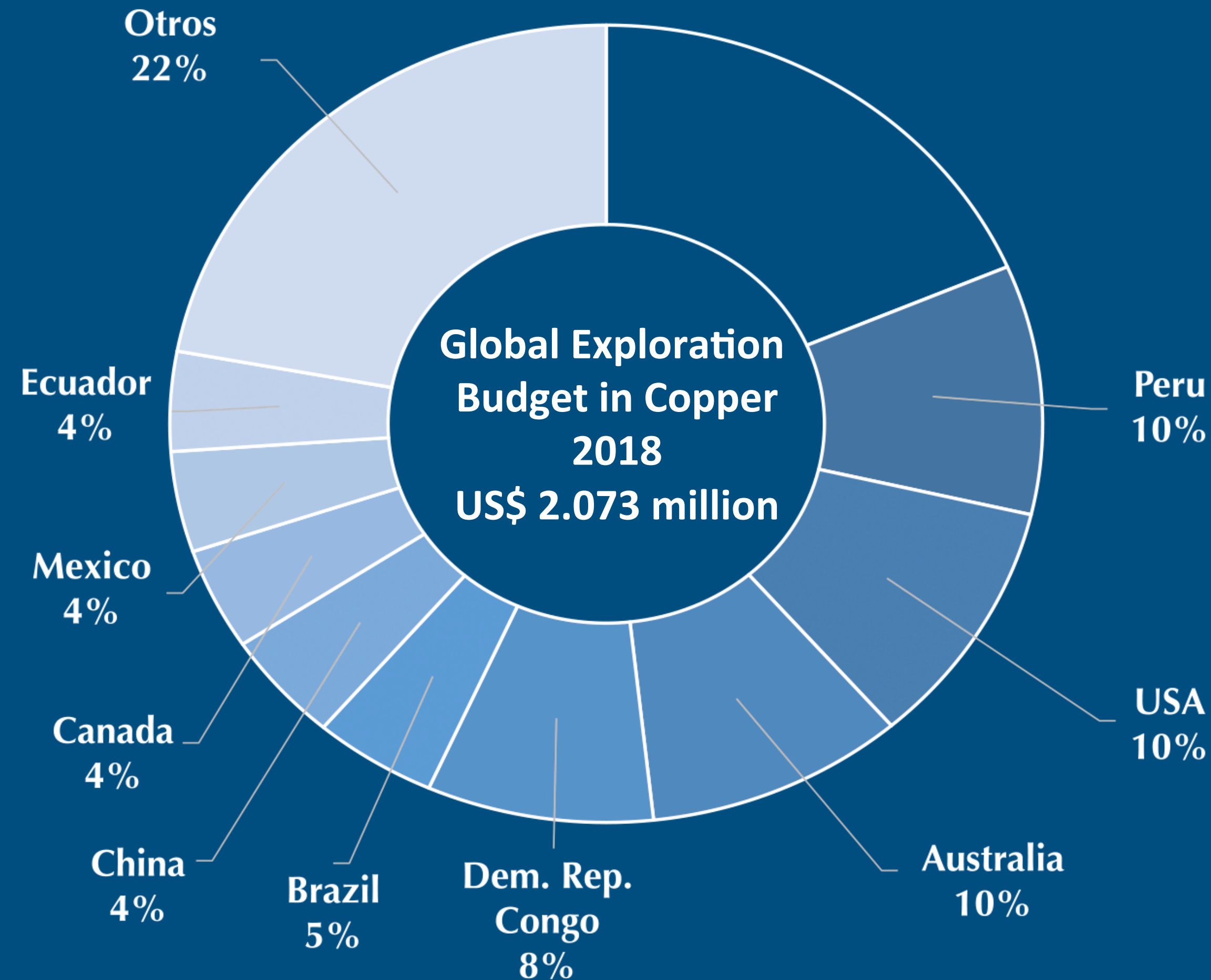
## INVESTMENT IN MINING



## DEVELOPMENT OF ELECTRIC MOBILITY

# COPPER MINING EXPLORATION BUDGET IN CHILE 2018

## ■ BUDGET IN US\$



- We are one of the world's favourite countries for exploration investment (6° place in the world).
- Chile stays as the main copper mining exploration destination.
- The copper exploration budget in Chile reached US\$ 384,7 million in 2018, a 19% of the world's total.

## PRO-INVESTMENT GOVERNMENT

- We are a pro-investment government, but always within the framework of respect for current regulations. As of April of this year, the Ministry of Mining created the Sustainable Development Division to promote and accompany mining investments so that they can materialize.
- We want to reduce the number of permits requested from investors since they are bureaucratic obstacles that delay the implementation of mining projects.
- Creation of the Sustainable Project Management Office (GPS) and the Sustainable Development Division of the Ministry of Mining.



Ministerio de  
Minería  
Gobierno de Chile

Inicio Ministerio Autoridades Prensa

Inicio / Comunicados de Prensa »

6 de abril de 2018

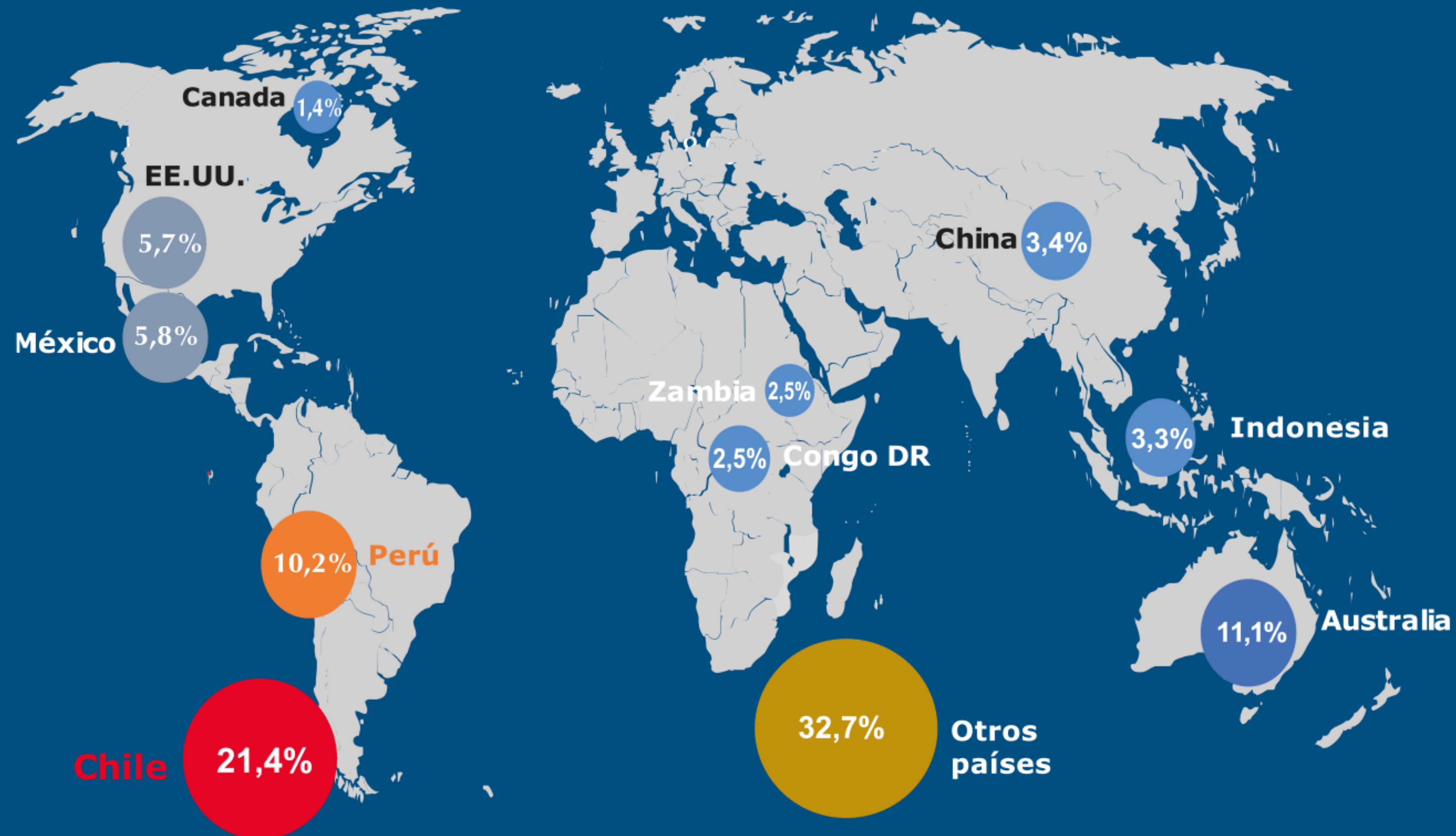
Ministro Prokurica encabeza primera reunión de trabajo para crear la Unidad de Desarrollo Sustentable



# OUR GEOLOGICAL POTENTIAL

- According to data elaborated by The United States Geological Survey (USGS) Chile owns 21,4% of the world's copper reserves.

- COPPER WORLD RESERVES

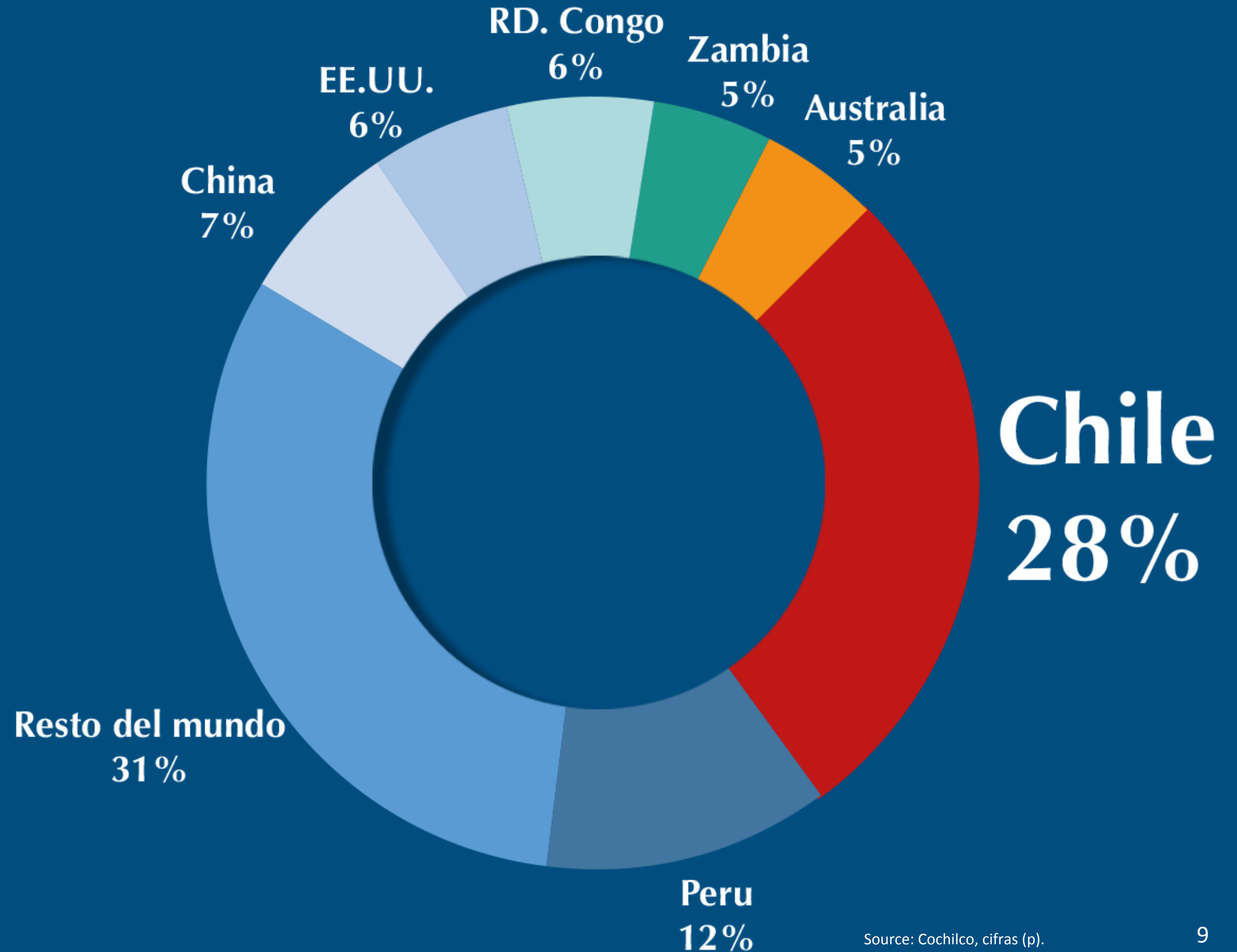


Source: USGS Mineral Commodity Summaries (2018).

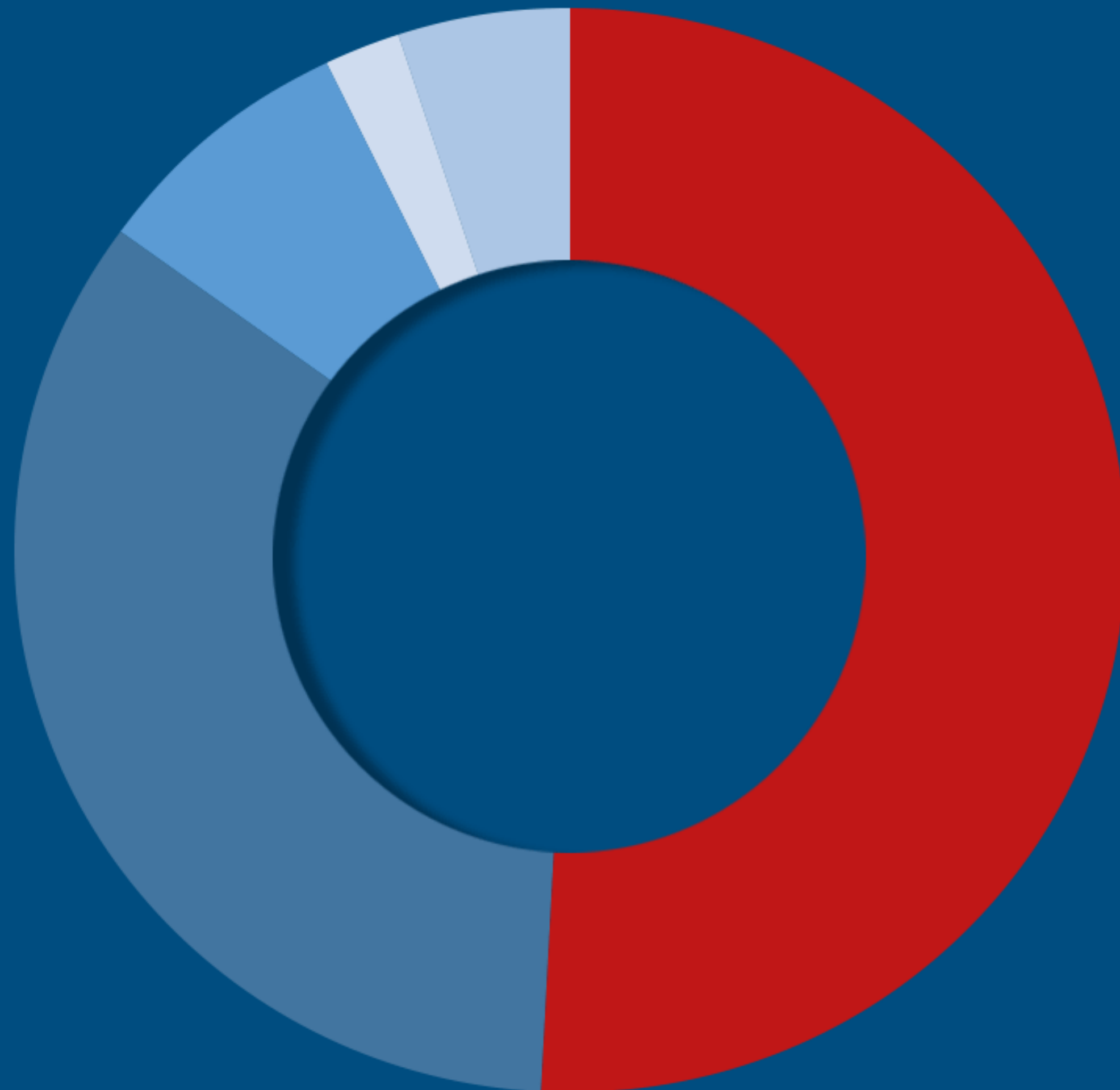
## FINE COPPER PRODUCTION AND WORLD PARTICIPATION

- Chile is the leading producer of copper, iodine and rhenium in the world and we are in second place in molybdenum and lithium.
- In 2018, Chile produced 28% of the world's copper.

■ WORLD COPPER PRODUCTION



# PORTFOLIO OF MINING INVESTMENTS 2018-2027



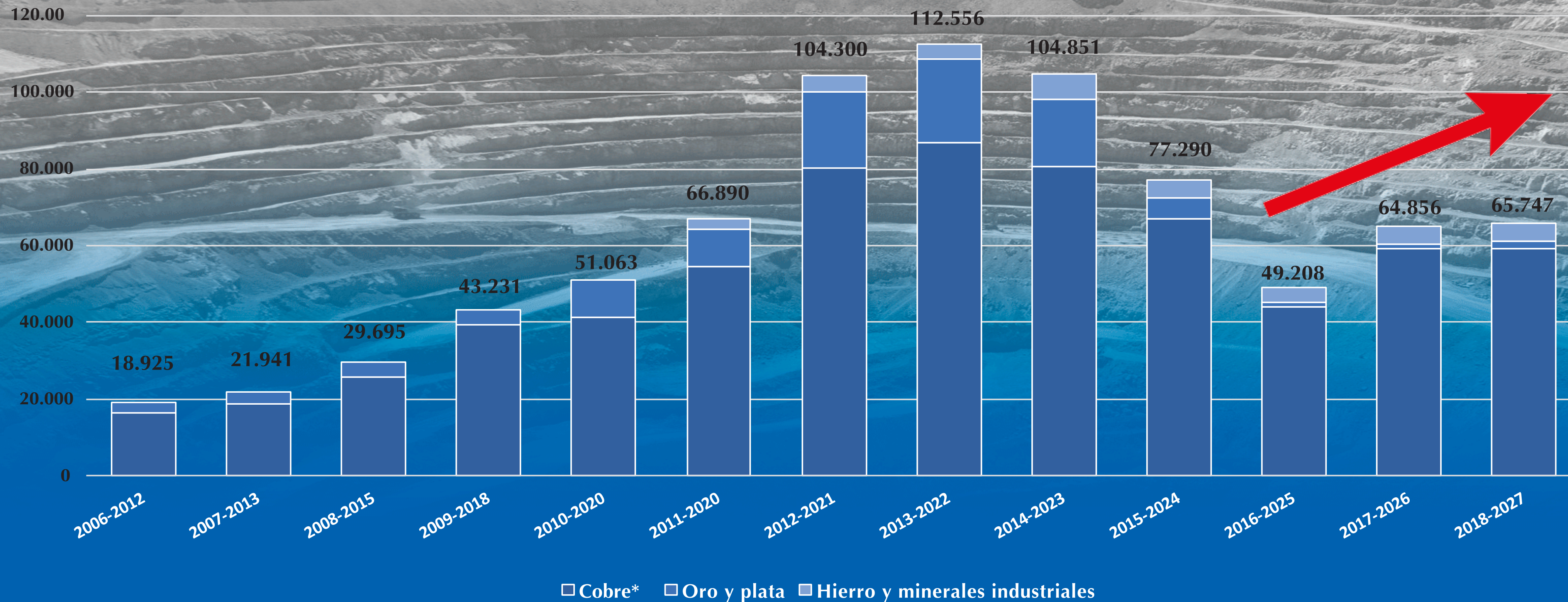
- “Investment in Chilean Mining – 2018-2027 Project Portfolio Report” foresees US\$ 65.747 million in investment for the next 10 years.
- Highlighted are 19 private médium and large mining projects for an estimate of US\$33.176 million, and 9 Codelco projects for US\$ 22.159 million.

Source: Elaboración Ministerio de Minería en base a Cochilco. No incluye proyecto de litio Maricunga de Minera Salar Blanco.

# INVESTMENT PORTFOLIO EVOLUTION

- In 2018 our project investment portfolio grew 1,4%, which accounts for US\$ 900 million more than the previous period.
- This mining project portfolio is the highest in the last three years.

## NUMBERS IN MILLIONS OF DOLLARS



## WE ARE AN ATTRACTIVE MARKET FOR SUPPLIERS

- It is estimated that mining purchases for goods and services from the supplier industry reaches around US \$ 20 billion per year in Chile.

### Important Portfolio of Mining Investments in Chile.

- It is an opportunity for more suppliers of equipment and services to participate in the Chilean market.

### Incorporation of knowledge and new technologies to the mining business.

- Contributes to the efficiency, productivity and safety of workers in the mining industry.

## WATER RESOURCES AND MINING WASTE

- Although we have great geological potential and an important investment portfolio, we must also consider some challenges that the sector must face in the water and waste management field.
- Enapac project will be the largest desalination plant in Latin America, to be installed in the mining region of Atacama (US \$ 500 million investment).
- Empresa que reprocesa los relaves de la División El Teniente de Codelco. Caso Minera Valle Central.

### ENAPAC PROJECT (“ENERGIES AND WATERS FROM THE PACIFIC”) Atacama Region



### VALLE CENTRAL MINING Libertador Bernardo O’Higgins Region



- Among the various existing projects in the country, we highlight 32 medium-sized mining initiatives, 25 of those correspond to exploration and 7 are exploitation projects. These 7 projects represent an estimated investment of over US\$ 500 million.

## • Projects by region and type



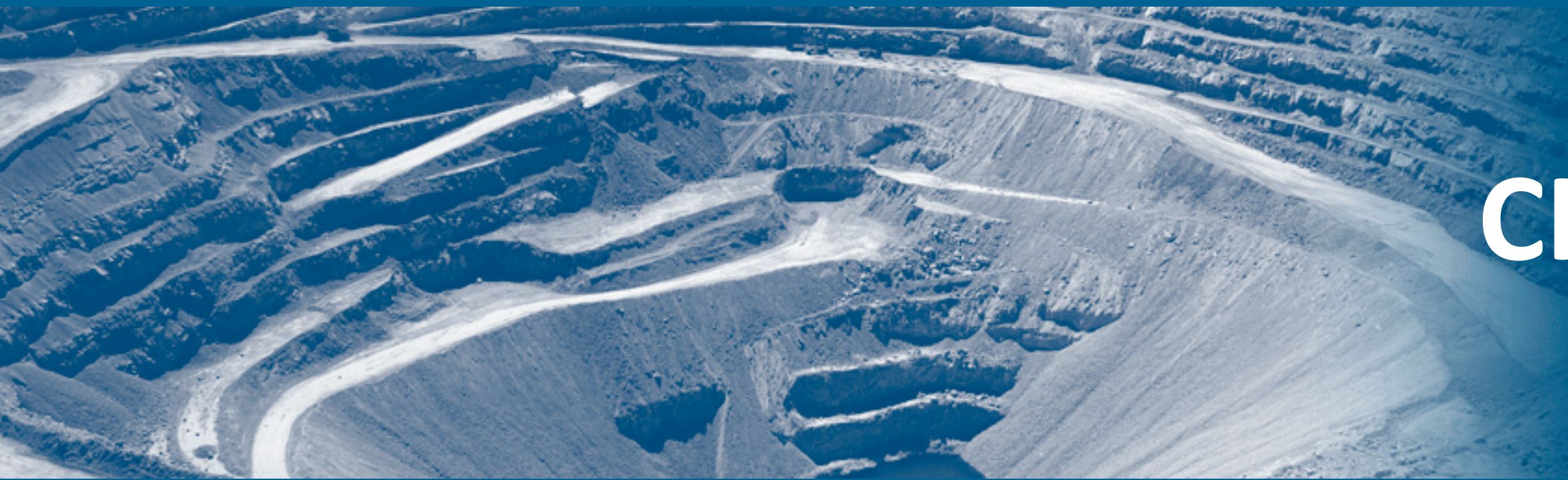


- ENAMI, the mining promotion State company, also has interesting mining property prospects to develop mining projects in partnership with investors who can provide capital for their development.

## ENAMI

Lithium Deposits	Cobalt Deposits	Copper Deposits
<p><b>AGUILAR &amp; INFIELES Salt Flats</b> Atacama Region 70 km northeast of El Salvador</p>	<p><b>EL QUISCO &amp; EL MANZANO</b> Coquimbo Region 40 km southeast of Coquimbo Tambillo District</p>	<p><b>LAS PINTADAS</b> Atacama Region 130 km southeast of Copiapó</p> <hr/> <p><b>CERRO MANCHADO – IMILAC - LAVALLE</b> Antofagasta Region 160 km east of Antofagasta</p>





# CHILE, STRENGTHS FOR MINING INVESTMENT



# INVESTMENT IN MINING

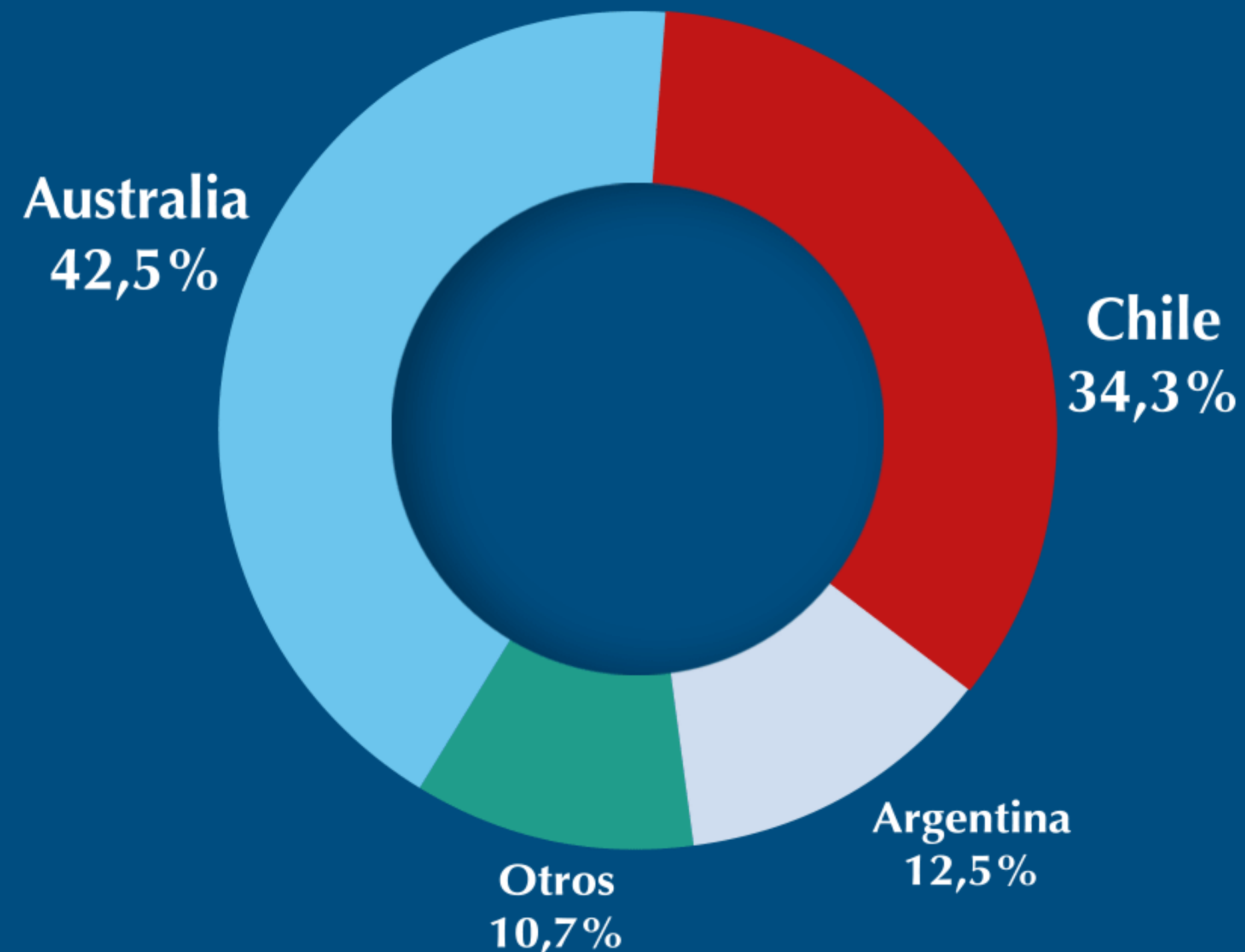


# DEVELOPMENT OF ELECTRIC MOBILITY

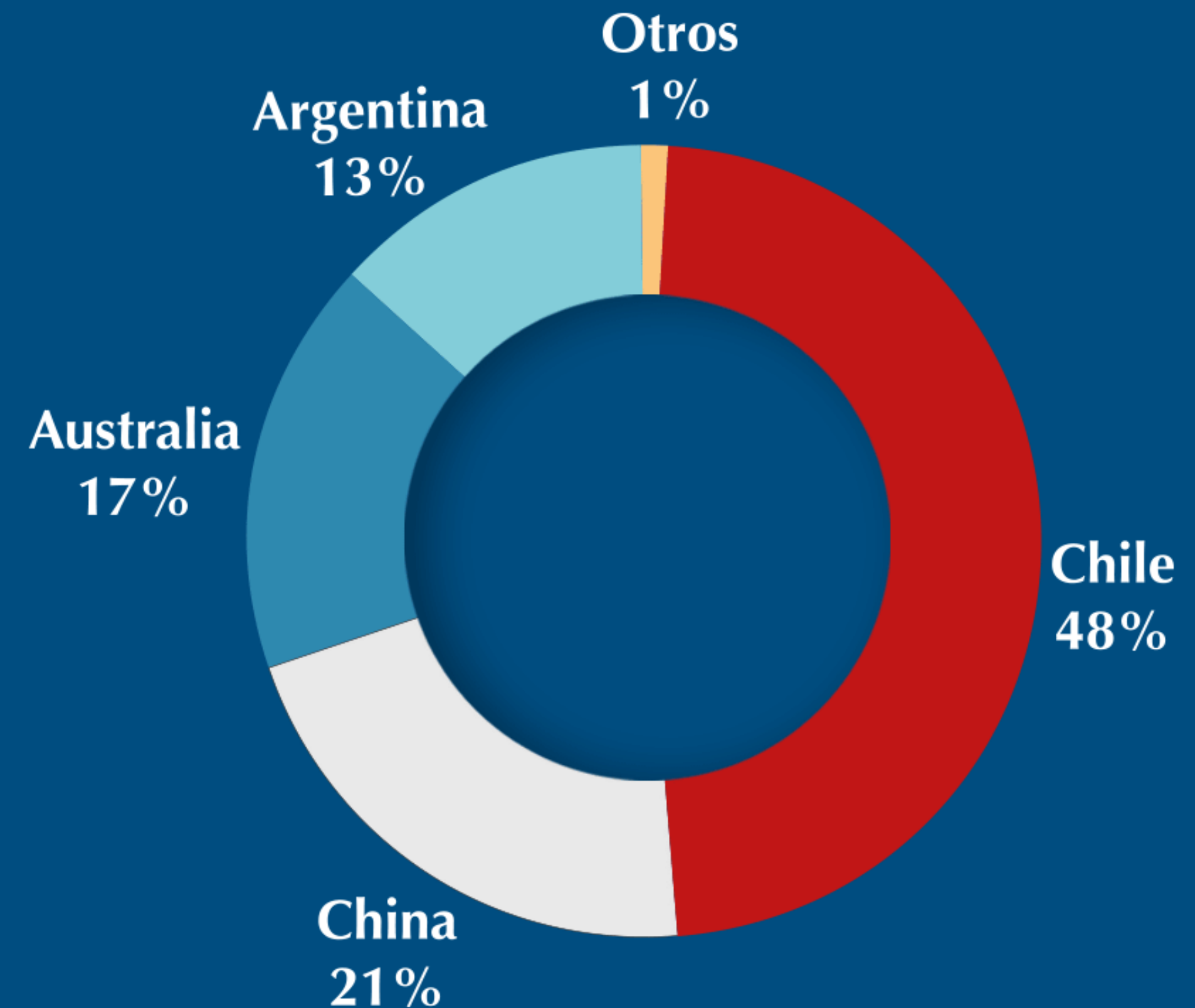
# LITHIUM INDUSTRY IN CHILE

- Chile is the second lithium producer in the world, and has 48% of the world's reserves.
- In 2017 lithium carbonate equivalent (LCE) production in the world reached 234.252 tons, an increase of 15,1% compared to 2016.
- In 2017 Chile produced 80.417 tons of LCE, 34,3% of the world's rproduction.
- By 2022 lithium production will reach 240 thousand tons.

## ▪ LITHIUM PRODUCTION



## ▪ LITHIUM RESERVES



## LITHIUM PROJECT PORTFOLIO IN CHILE

- We have a portfolio of projects for US \$ 1,807 million.
- Codelco began their exploration process in the Maricunga Salt Flat and is moving forward in the search for a partner to develop its project.



Project	Company	Amount
Planta La Negra – Fase 3	Albemarle	US\$ 300 millones
Ampliación Salar del Carmen	SQM Salar	US\$ 180 millones
Producción de Sales Maricunga	SIMCO SpA	US\$ 350 millones
Ampliación Salar del Carmen Amp. Carbonato de Litio A 180	SQM Salar	US\$ 450 millones
Maricunga	Minera Salar Blanco	US\$ 527 millones

Source: Elaboración en base a Cochilco y Ministerio de Minería.

# DISTRIBUTION OF SALT FLATS AND LAGOONS IN CHILE

- In our country there are 63 saline systems divided into 45 salt flats and 18 saline lagoons.
- Of those, the National Geology and Mining Survey (Sernageomin) studied the geological potential of 18.
- Among the Salt Flats and Lagoons with potential to produce lithium we highlight: Atacama, Tara, Quisquiro, Aguas Calientes Centro, Pajonales, La Isla, Aguilar, Parinas, Pedernales and Maricunga.



## OPPORTUNITY FOR MANUFACTURING INVESTMENT IN THE CHILEAN LITHIUM INDUSTRY

- Contract signed between Corfo and Albemarle in 2016 has a clause in which 25% of Albemarle's lithium production will be offered at a preferential price to those companies, installed in Chile, willing to add value.
- Corfo made a call to add value to the Lithium of said 25% of production, selecting three projects that will produce investments of US\$ 754 million in Chile, and thus industrialize lithium in the north of the country. The companies will produce about 58,000 tons of materials for battery cathodes.

- The selected projects correspond to the following companies:

✓ Molymet.

✓ SAMSUNG SDI Co y POSCO de Corea.

✓ Sichuam Fulin Industrial Group.



## FAVOURABLE EXPECTATIONS FOR COPPER AND LITHIUM

- Our copper and lithium reserves will be highly demanded by the push towards electric vehicles.
- We have a major opportunity to advance into development and to generate more job opportunities. It is key to jump on the value chain.
- An conventional car utilizes 23 kilograms of copper, an electric one consumes 83 kilograms.
- An electric car battery uses between 40 to 50 kilograms of lithium carbonate equivalent (LCE).

BY 2027 IT IS FORCASTED A TOTAL OF **27 MILLION** ELECTRIC VEHICLES



AN ELECTRIC CAR BATTERY HAS BETWEEN **40 AND 50 KILOGRAMS OF LCE**



AN ELECTRIC BUS CONTAINS AROUND **369 KILOS OF COBRE**



BY 2027 DEMAND FOR COPPER TO PRODUCE ELECTRIC VEHICLES WILL INCREASE BY **9 TIMES**



## OUR MINISTRY VISION

- “Chile will continue to be a mining country for a long time”, Baldo Prokurica, Minister of Mining.



**Gracias**  
**(Thank you)**



**CHILE LO  
HACEMOS  
TODOS**