



**Ministerio de
Minería**

Gobierno de Chile

Mining Investment in Chile

Challenges and Opportunities

Australia

November 2015

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Government of Chile - Ministry of Mining



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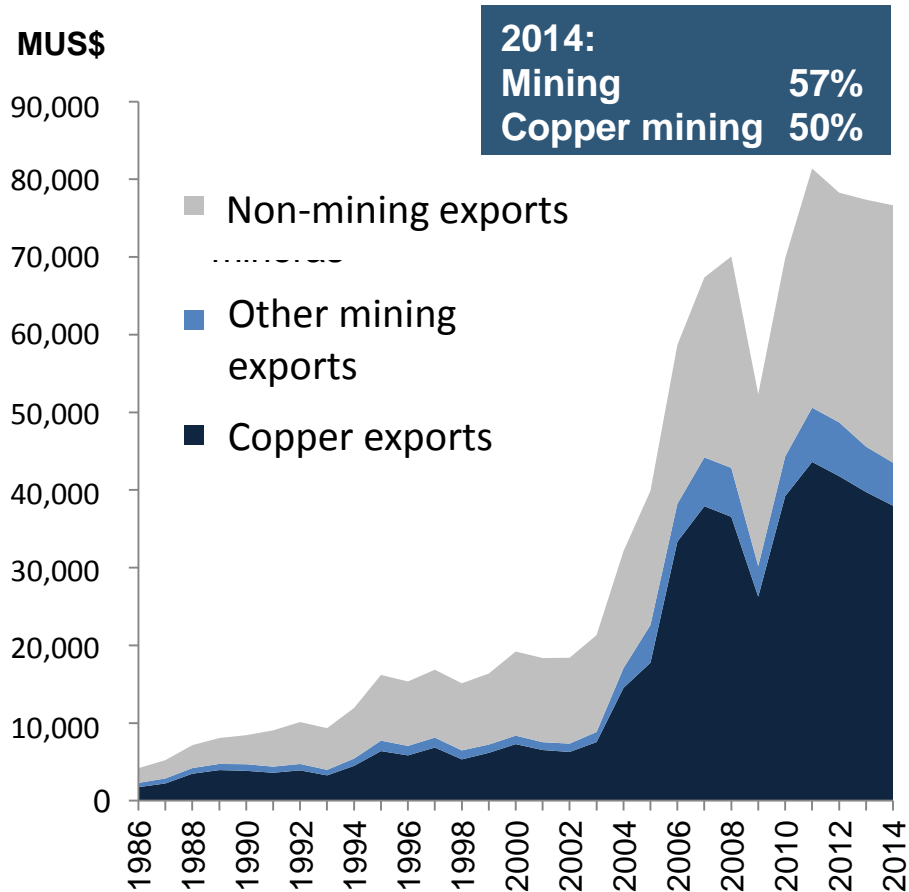


I. Mining in Chile and investments



Why Chile is attractive for mining investment?

Economic Development



Tax revenue (2014)

- 9% of total
- US\$ 4.9 billion



Foreign Direct Investment (2009 – 2013)

- 45%
- US\$ 45.3 billion



GDP (2008 – 2014)

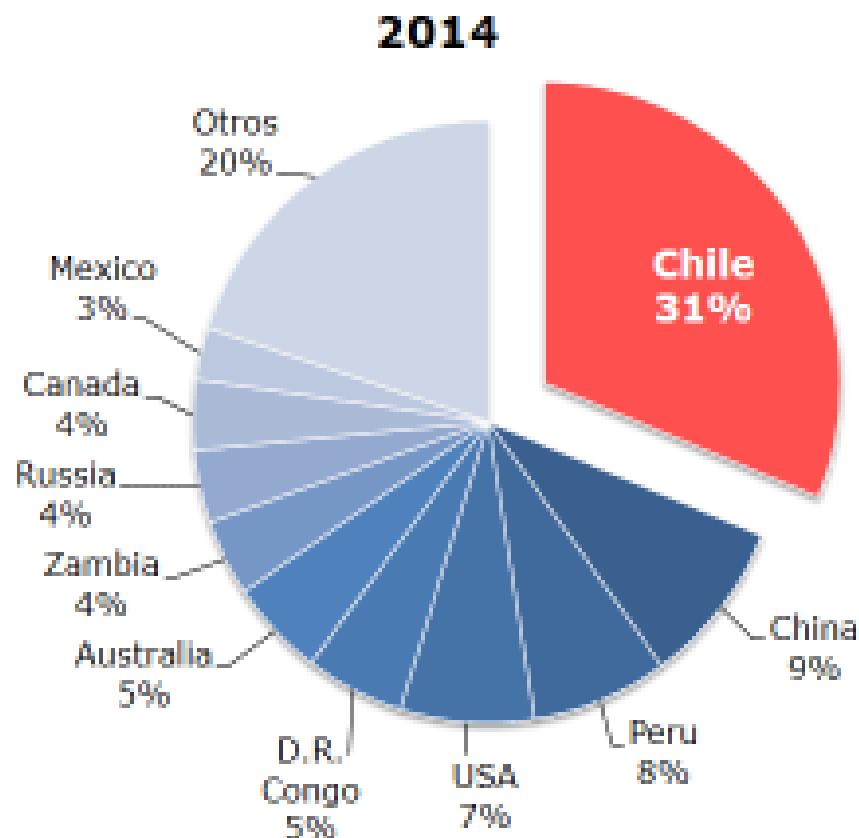
- 13% nominal

Source: Central Bank of Chile, COCHILCO

World copper mine production

Thousands of tons

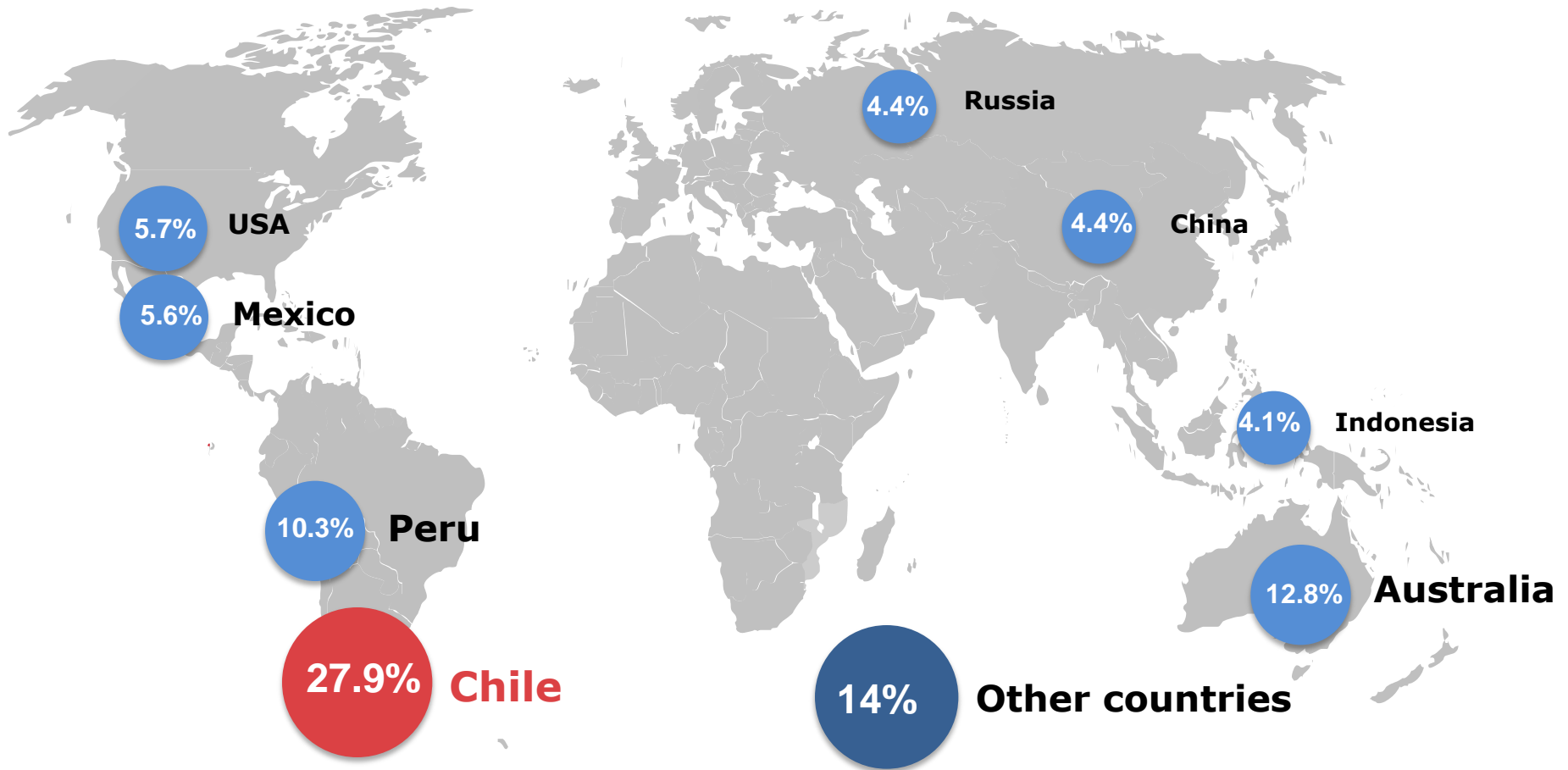
Country	2013	2014
Chile	5,776	5,745
China	1,707	1,632
Peru	1,376	1,380
USA	1,240	1,346
D.R. Congo	817	999
Australia	996	963
Zambia	839	759
Russia	720	720
Canada	632	696
Mexico	480	513
Others	3,705	3,677
World	18,288	18,428



Source: COCHILCO Y WBMS

Why Chile is attractive for mining investment?

Geological potential

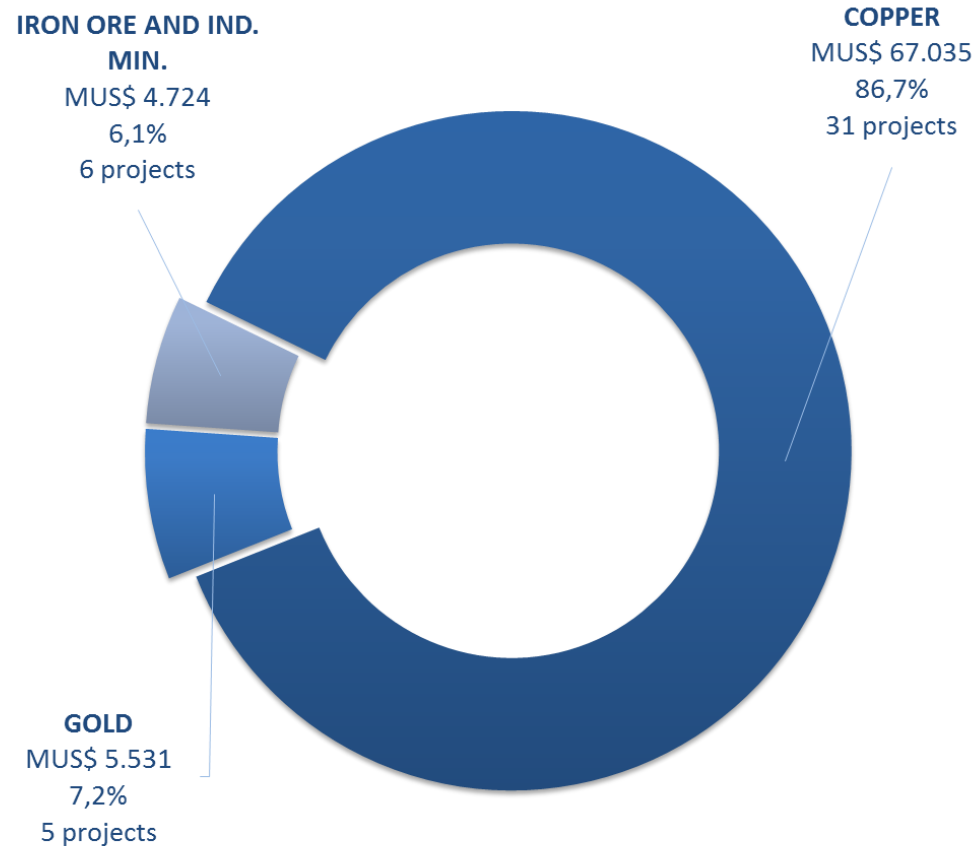


Source: USGS Mineral Commodity Summaries (2014)

Mining projects portfolio

Investment by the mining sector

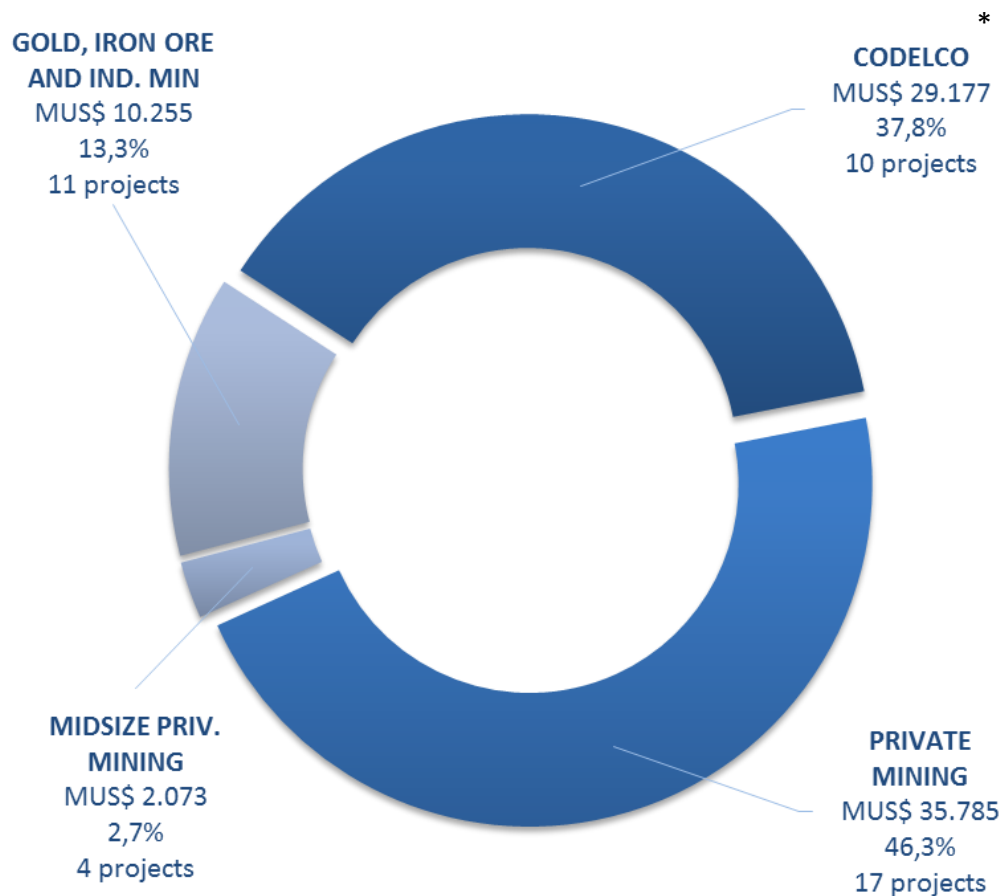
The portfolio of mining projects 2015 - 2024 considered 42 initiatives, broken down as follows, according to sector.



Source: COCHILCO

Mining projects portfolio

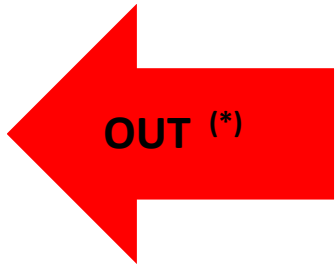
Investment by type of company



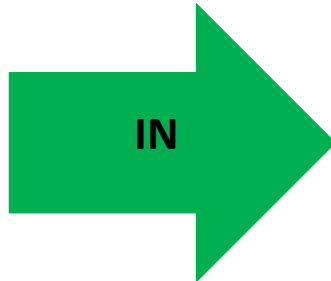
Source: COCHILCO

(*) CODELCO investment includes metallurgical plants, other development projects, information projects and five structural projects

Current status of investment portfolio



- **Pampa Hermosa** (MUS\$ 1,033)
- **Cerro Negro Norte** (MUS\$ 1,200)
- **Escondida Nueva Pila de Lix. De Óxidos** (MUS\$ 721)
- **Planta Nitrato Potasio – Coya Sur** (MUS\$ 250)
- **Sierra Gorda** (MUS\$ 4,240)
- **Bellavista** (MUS\$ 143)



- **Actualización Quebrada Blanca** (2016 – MUS\$ 165)
- **Arbido** (2017 – MUS\$ 503)
- **Los Bronces / Fase 7** (2017 – MUS\$ 112)
- **Spence Growth Option** (2019 – MUS\$ 3,300**)

Source: COCHILCO, 2015.

(*) in operation in 2014

(**) Including desalination plant

Projects under review*



UNDER REVIEW

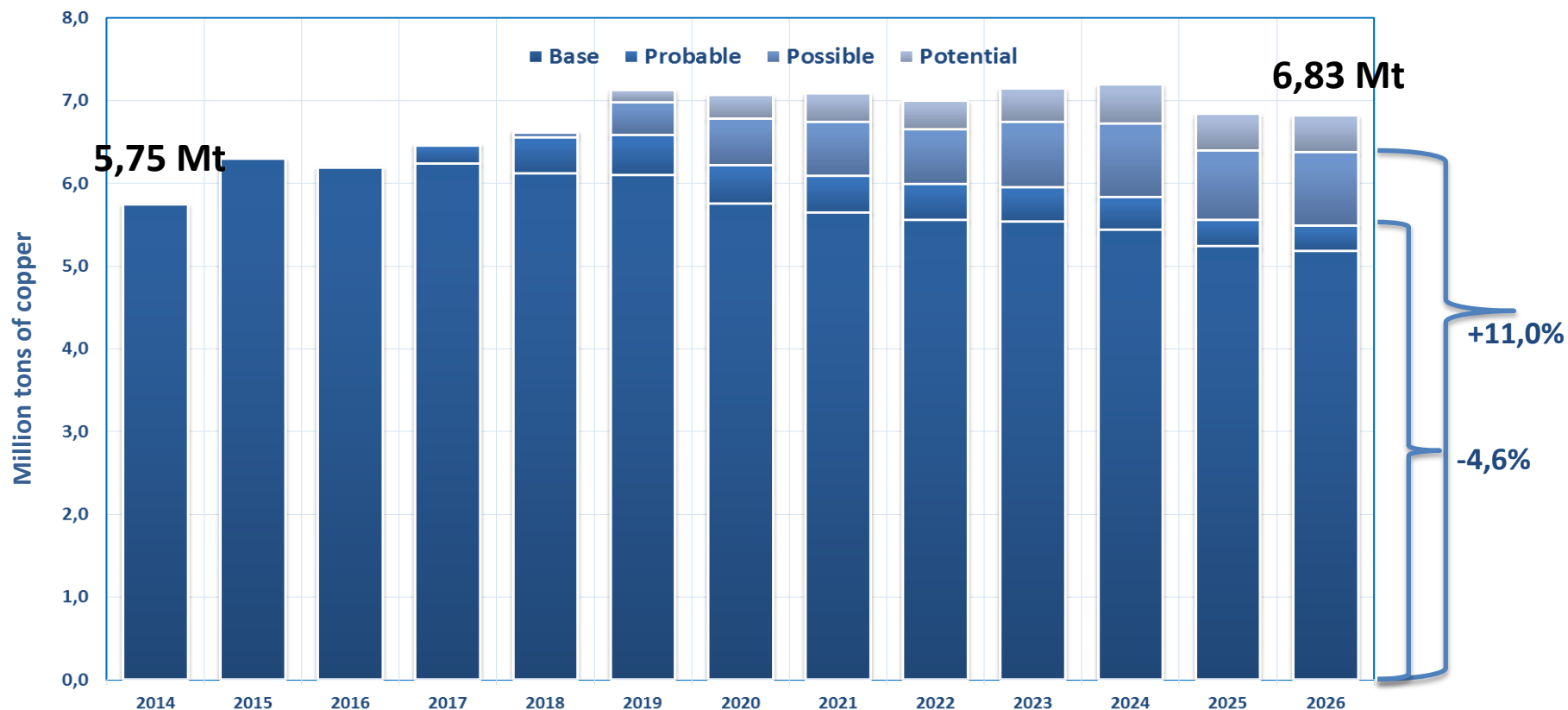
- **Jerónimo** (Gold, MUS\$ 423)
- **Lomas Bayas III Sulfuros** (Priv. mining - Cu, MUS\$ 1,600)
- **Tovaku** (Mid. Min. – Cu, MUS\$ 600)
- **Lobo Marte** (Gold, MUS\$ 800)
- **Inca de Oro** (Mid. Min. – Cu, MUS\$ 600)
- **Volcán** (Gold, MUS\$ 800)
- **Cerro Casale** (Gold, MUS\$ 6,000)
- **El Morro** (Gold, MUS\$ 3,900)
- **Collahuasi Expansión Fase III** (Priv. mining – Cu, MUS\$ 6,500)
- **Ampliación Los Pelambres IV** (Priv. mining – Cu, MUS\$ 7,000)

Source: COCHILCO, 2015.

(*) Projects out from the portfolio to be under review process without starting or investment decision clarified by companies

Copper production forecast

By levels of certainty, 2014 - 2026



In the last thirteen years (2002 - 2014) Copper mine production grew 25.5% at an average annual rate of 1.8%. The project portfolio has a potential production growth of 18.7% copper mine at an average annual rate of 1.3%.

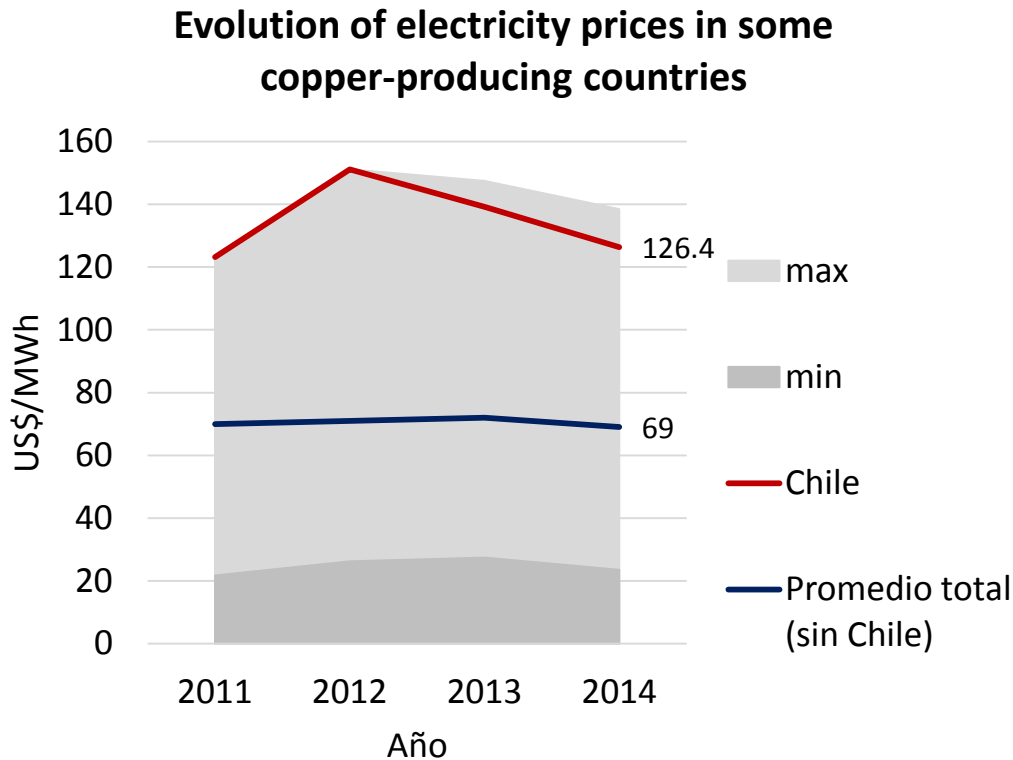


III. Challenges of the Chilean mining industry



Energy (Electricity+Fuels)

Energy prices have been declining



A decrease in energy prices in Chile are expected in the medium term due to the large amount of NCRE projects that will be part of the Chilean energy matrix (20% by 2025)

Source: Prepared by Cochilco based on information Wood-MacKenzie, 2015.

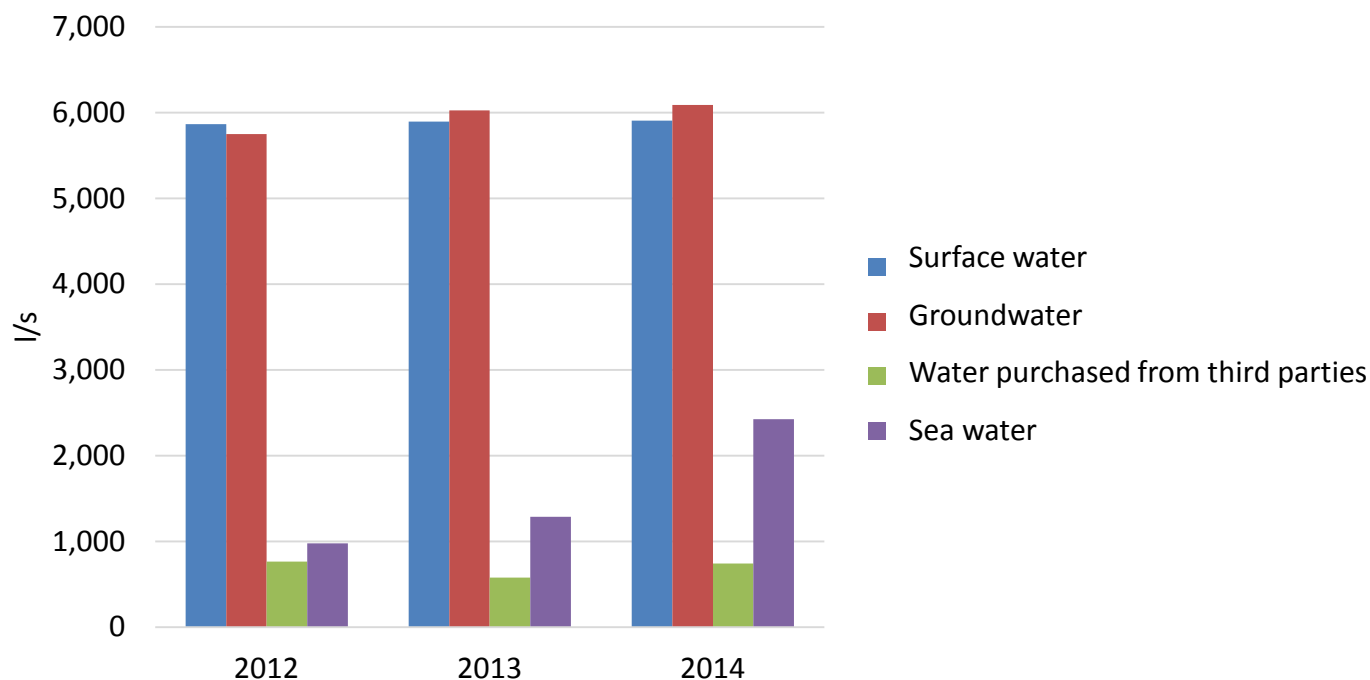
* The 2014 only considered until the third quarter of the calendar year.

Countries that are considered in this average are: Argentina, Australia, Brazil, Canada, Chile, China, Congo, Indonesia, Kazakhstan, Mexico, Mongolia, Papua New Guinea, Peru, Philippines, Russia, South Africa, USA, Zambia

Water

Different sources of extraction

Water extraction in copper mining, by source



Source: COCHILCO, 2015

Water sources are the most commonly used surface and groundwater. However seawater is being increasingly required, achieving an increase in the extraction of 88.3% between 2013 and 2014

What is Chile doing to stay competitive?



- **Research and Development Commission**
(Comisión de Investigación y Desarrollo)

- Advises the President of Chile on the identification, formulation and implementation of policies and actions to strengthen innovation and competitiveness in Chile.



- **Mining and Development Commission of Chile**
(Comisión Minería y Desarrollo de Chile)

- Mining and Development Commission of Chile Team with representatives of public-private sector summoned to build a strategic vision of the challenges (gaps) facing copper mining development

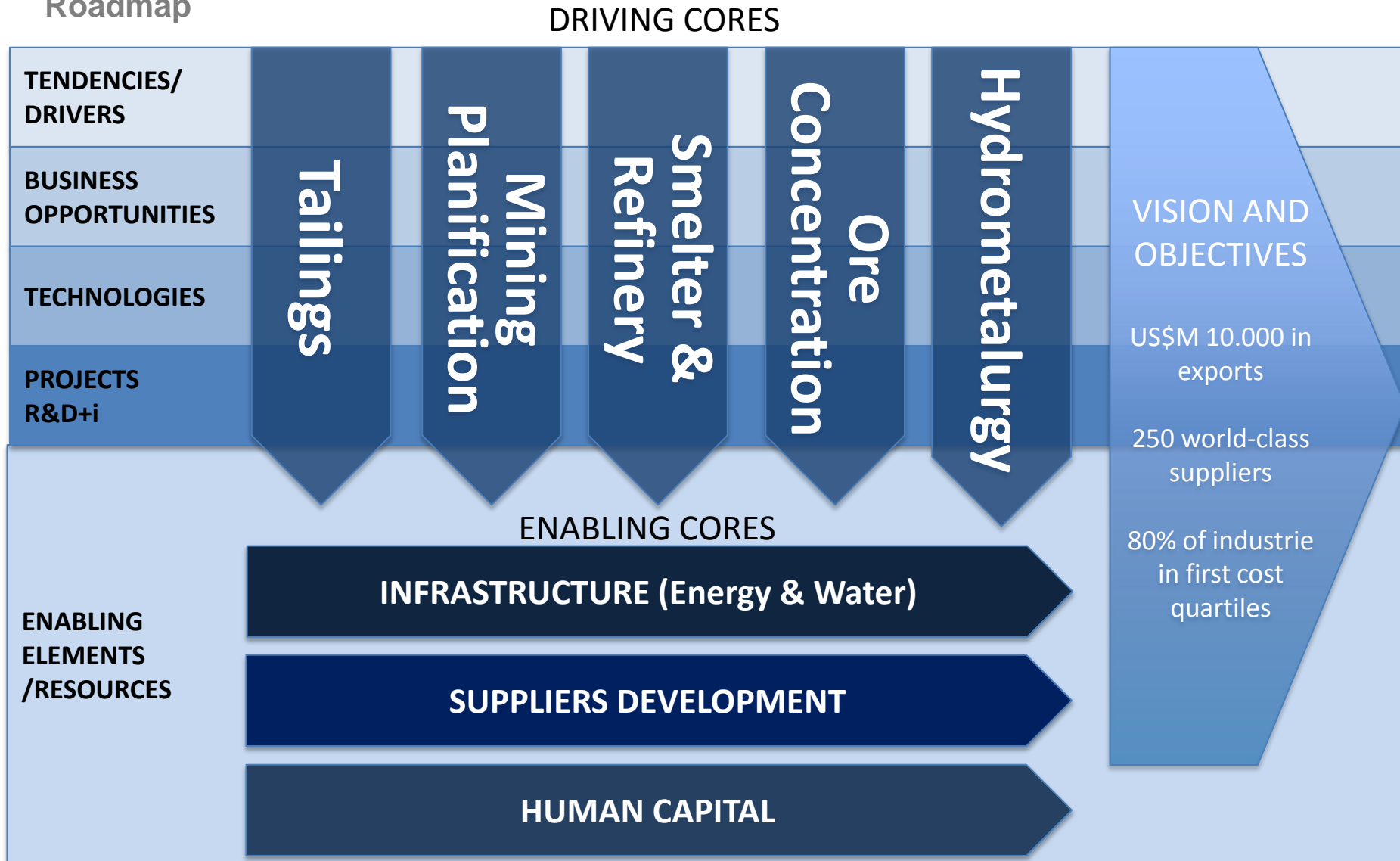


- **Mining: A platform for the future of Chile**
(Minería: Una plataforma de futuro para Chile)

- Mining: A platform for the future of Chile Strategic agenda and guidance to bring the Chilean mining to a virtuous mining (competitive and productive), inclusive (communities) and sustainable (socially and environmentally).
- One of the strategic commitments, beginning in 2015, corresponding to generate collaborative initiatives and fund R & D + i.

What is Chile doing to stay competitive?

Roadmap





III. Final Comments

Chile: Mining Country

- ✓ The portfolio consists of two groups of initiatives. The first group are **base and probable projects**, which are more likely to materialize within the terms specified by proprietary mining companies, a total of 24 initiatives worth US 31,345 million.
- ✓ The second group of projects correspond to those **possible and potential**; it means mining investments with less probability to materialize within the terms defined by its owners, and those most likely to be affected by changes in market conditions, which total 18 initiatives worth US 45,945 million.
- ✓ For the first time CODELCO presents an investment portfolio almost equal to the private copper mining investment portfolio, which more than seeking to increase productivity for its own, seeks to consolidate its sustainable long-term development allowing the continuity of its operations for the next 30 years.

Chile: Mining Country

- ✓ The increase in copper production shows a structural change in the type of end product, where the maximum production capacity in concentrates would increase by 1.89 million tons by 2026, 70.5% compared to 2014, while the cathodes SX-EW would decrease by 0.92 million tons, registering a decline of 50.1% over the same year.
- ✓ On sensitive issues such as the access to water, mining in Chile has made significant progress: an average of 25% is using sea water in its processes in areas with less water availability (Antofagasta and Atacama),.
- ✓ In energy, both the State of Chile and the industry have redouble their efforts to make more efficient use of this resource. It is noted that in the medium term energy costs should be adjusted downward.
- ✓ The applied policies, the institutional development and the efforts of all Chilean citizens involved in the mining sector have allowed Chile to **position itself as a leader in the global mining industry and to be the main copper producer in the world.**



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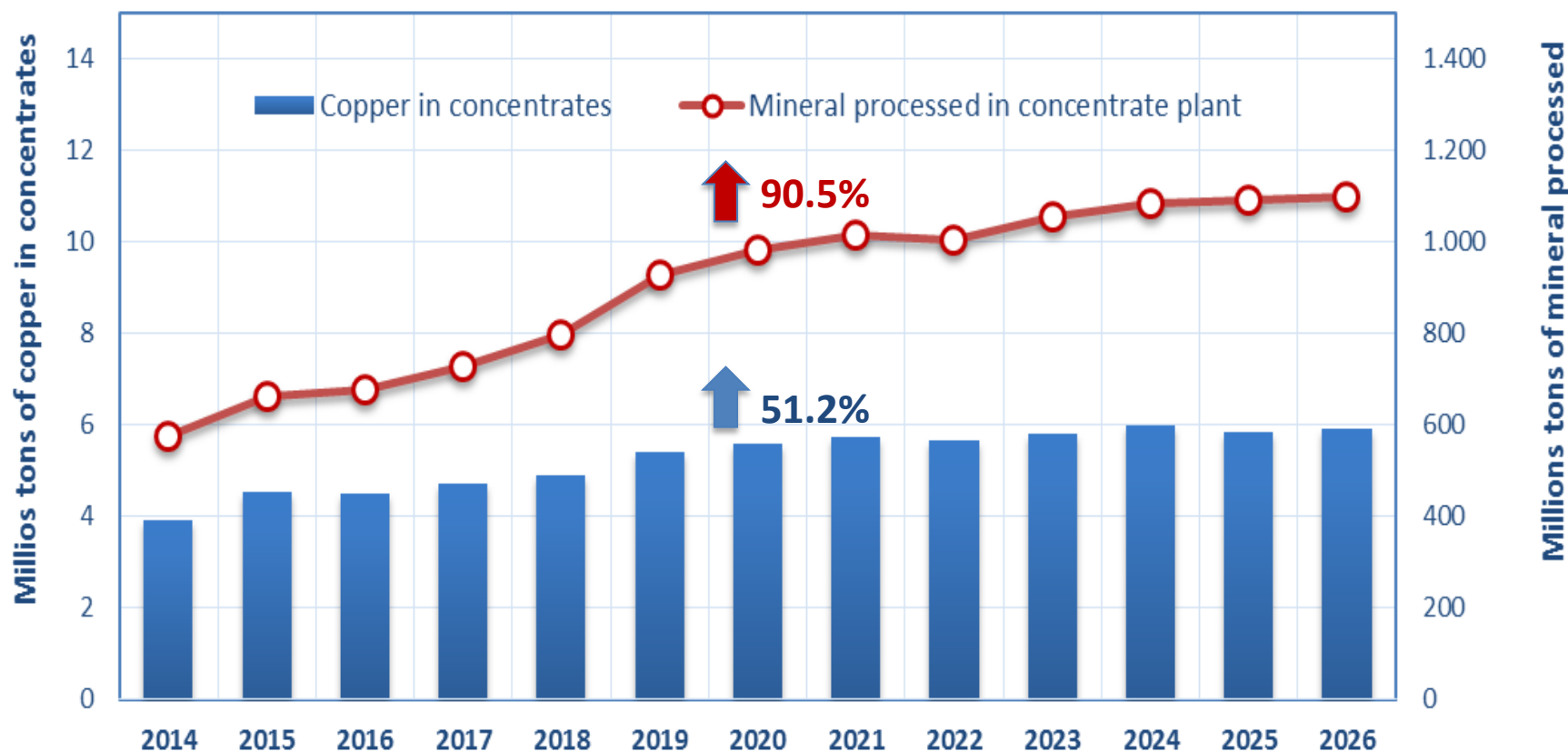
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Copper concentrate production forecast

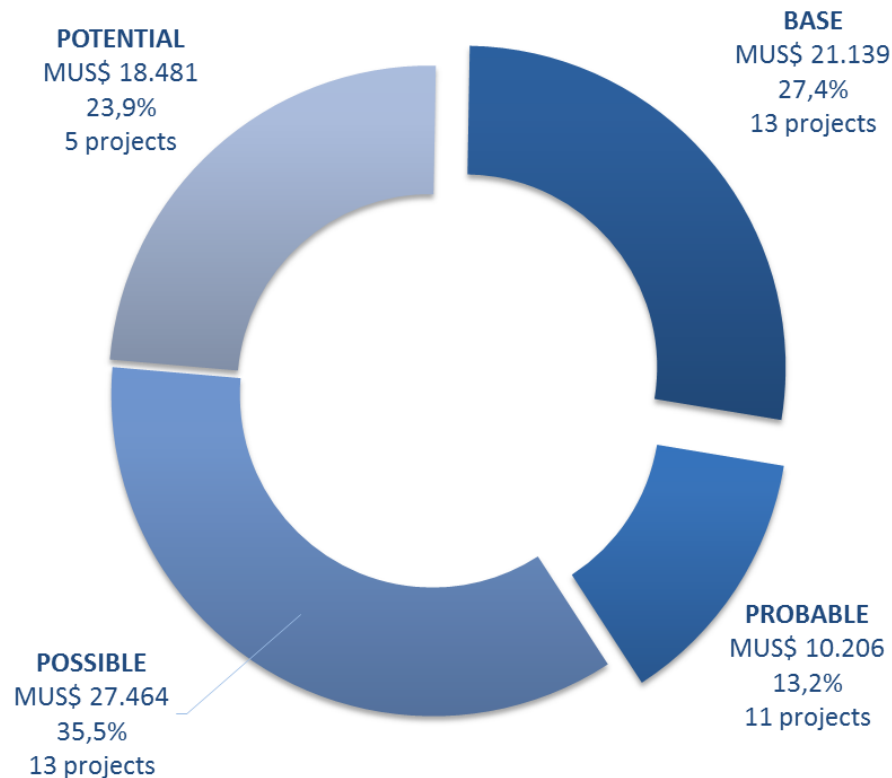
Increased mineral processing



Mining projects portfolio

Levels of certainty

Each project has considered attributes that give it a graduality associated with greater or lesser certainty meet its deadlines of materialization.



Source: COCHILCO