

# **Aligning the economic transformation with the long-term climate and biodiversity strategies: the role of finance and public policy**

**Mario Marcel Cullell**  
**Minister of Finance - Chile**

September 27, 2023

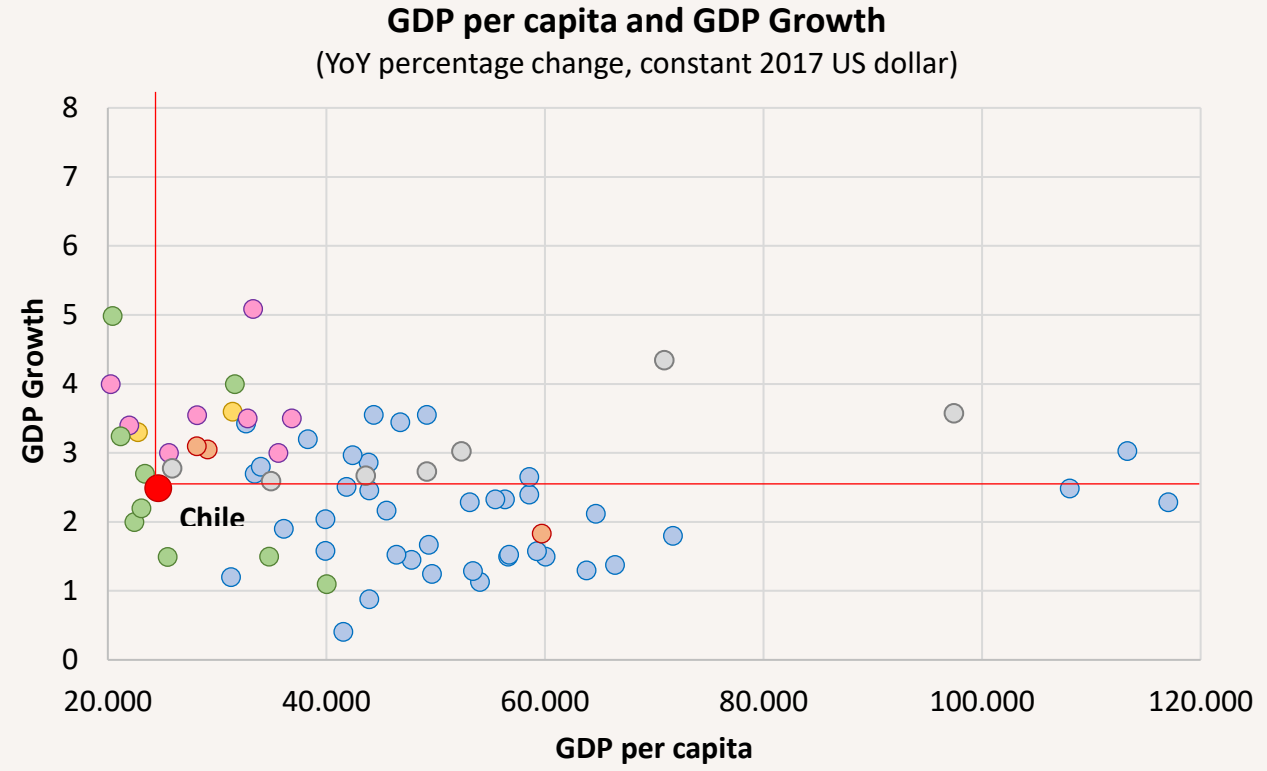
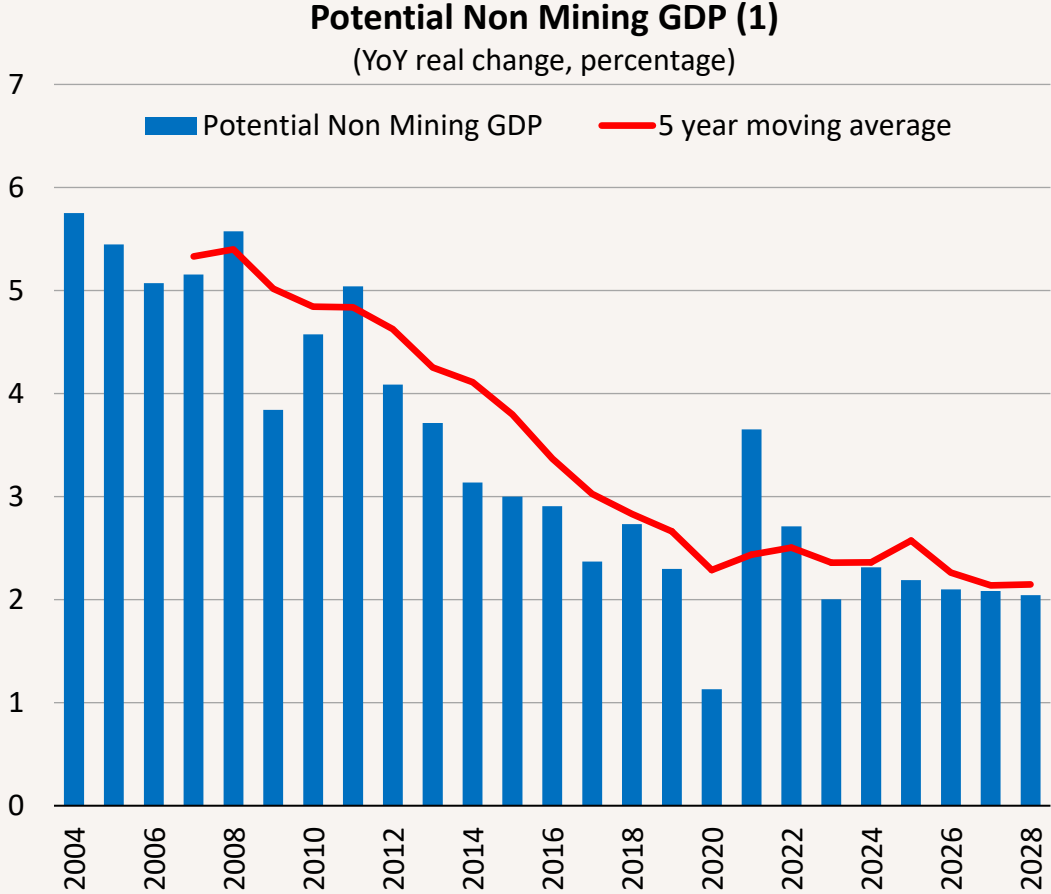


## Emerging opportunities to increase potential growth



- During the last 15 years, growth potential has declined substantially in Chile, mostly due to stagnant productivity. While many factors can explain the latter, declining returns and growing environmental barriers to the growth strategy that emerged in the 1980s and 90s, plus global trade conflicts, have played an important role.
- The global move towards environmental sustainability and the development of the digital economy are opening new growth opportunities to Chile. The country has strong comparative advantages in the production of essential inputs to electromobility and renewable energies, as well as deep broadband penetration.
- Adequate policies and regulations are essential to grab these opportunities. The Government is building on previous experience to develop an enhancing environment. This **includes fostering the greening of copper mining; developing a national lithium policy and a green hydrogen action plan; reinvesting lithium and copper earnings on R&D and infrastructure; full domestic connectivity and with business partners abroad, and the development of green financing.**
- Private investment, foreign capital and technology are also key to a new development strategy. The government is working on speeding up project preparation and authorizations, as well as removing remaining sources of business uncertainty.
- The Fiscal Covenant agenda includes concrete targets in the five areas for 2026, alongside specific measures to achieve them.

Potential growth has declined by 2 ½ pp between 2005 and 2023. Stagnant productivity explains a large part of this. Comparison with countries at a similar level of development indicate that improvements are possible.



**Note:** (1) Trend GDP estimated by a Committee of Experts for Trend GDP in 2023.  
**Source:** Ministry of Finance.

**Note:** Economies with GDP per capita greater than 20,000 constant 2017 international dollars are considered. GDP per capita is for the year 2022 at constant prices in Purchasing Power Parity (PPP). GDP growth is for the year 2028 at constant prices.  
**Source:** International Monetary Fund (IMF)

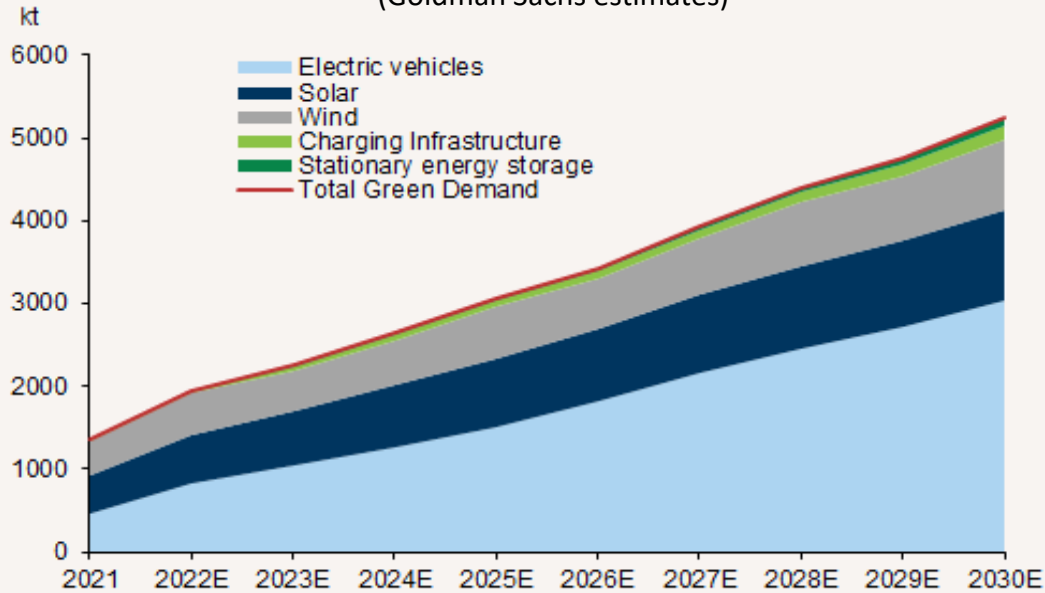
| <b>Economic sector</b>              | <b>Goal to 2026</b>   |
|-------------------------------------|---|
| <b>Clean and competitive mining</b> | Accomplish and maintain the production forecast of Cochilco*                |
| <b>Lithium</b>                      | 3 to 4 new projects under development                                       |
| <b>Renewable energies</b>           | 2/3 of matrix of electricity generation from renewable sources              |
| <b>Green hydrogen</b>               | 10-12 projects in development   |
| <b>Digital economy</b>              | The growth of the digital economy triples the average growth of the economy |

\* Cochilco: Chilean Copper Commission

# A greener global economy will increase demand for Chilean commodities like copper. Mining companies are investing to become a cleaner, greener industry

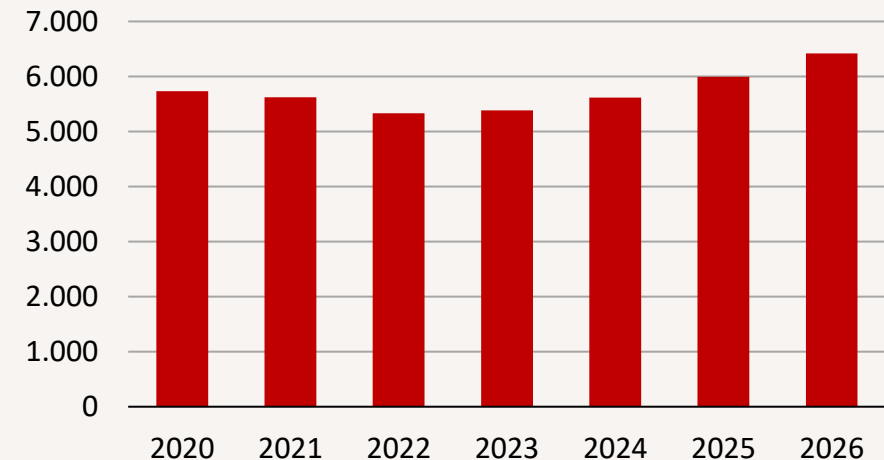
## Copper demand from "green factor"

(Goldman Sachs estimates)



## Copper production forecast

(millions of tons)

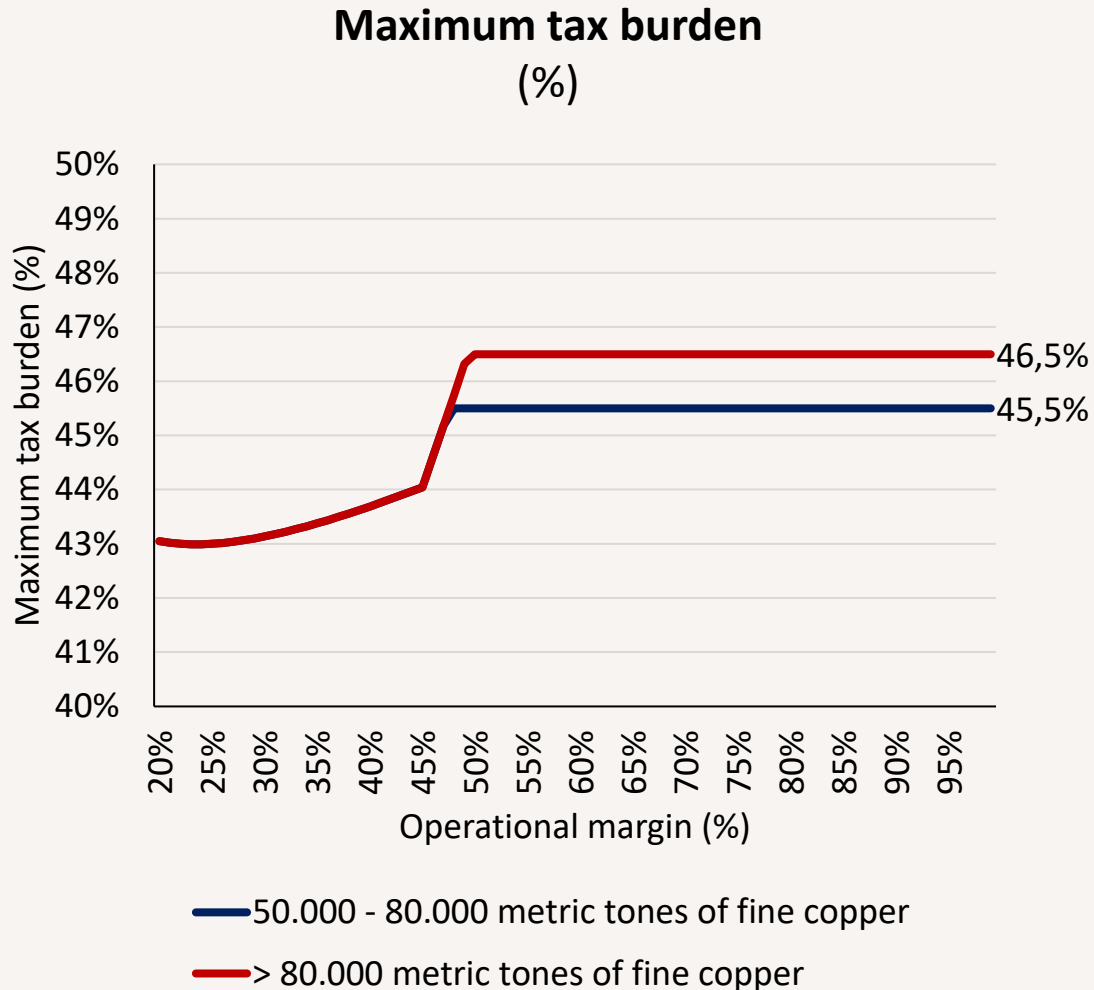


### Copper greening:

- Desalination plants
- Water recirculation processes
- Renewable energy supply
- Stricter emission standards
- More efficient, cleaner smelting plants



# Copper mining Royalty increases revenues for the State while ensuring stability and preserving incentives to invest



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## Mike Henry speech at World Mining Congress 2023

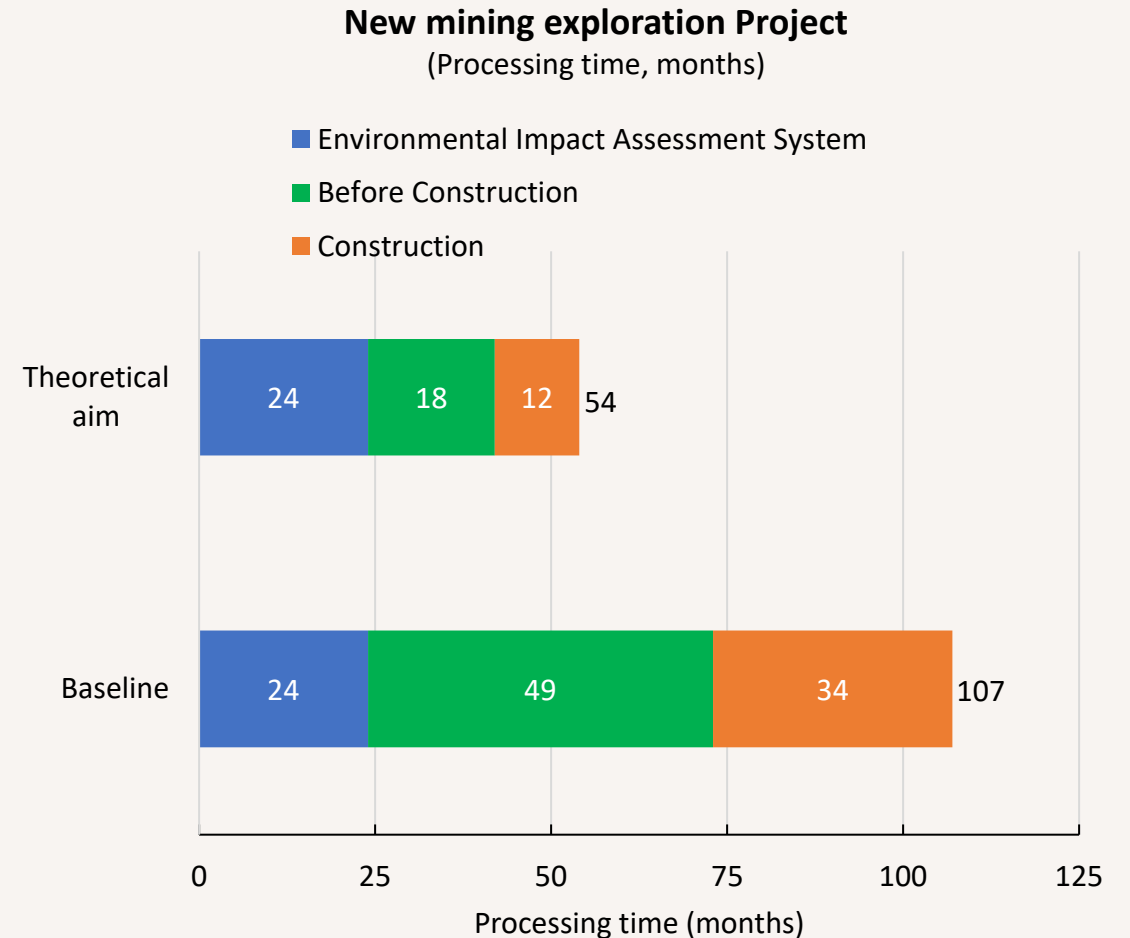
**Mike Henry, CEO BHP:**

The Government “engaged industry, and sought to understand and to work towards an outcome that struck a balance between public needs and what was required to keep industry and the country competitive (...). The process was respectful, with a focus on understanding and collaboration.”

“Both the outcome and the process lent themselves well towards maintaining investment attractiveness and BHP will continue to invest there.”

**A technical committee is identifying ways to reduce by a third the processing time involved in mining investment authorizations. A recent study by the National Evaluation and Productivity Commission (CNEP) argues this is a feasible goal**

- As part of the mining royalty negotiations, a technical committee was established, comprising representatives from key regulatory bodies, relevant ministries, the CNEP and the private sector.
- Its objective is to recommend a set of legal, regulatory, administrative, managerial, and budgetary measures to reduce by a third the aggregate processing time of the procedures required for an investment project to be approved, while maintaining protection standards (e.g., environmental).
- The CNEP was mandated to build a baseline, which will provide an integral measurement of the effective processing time before the measures are implemented and their evolution. The figure shows the impact on processing time of some recommendations according to the CNEP (2023).

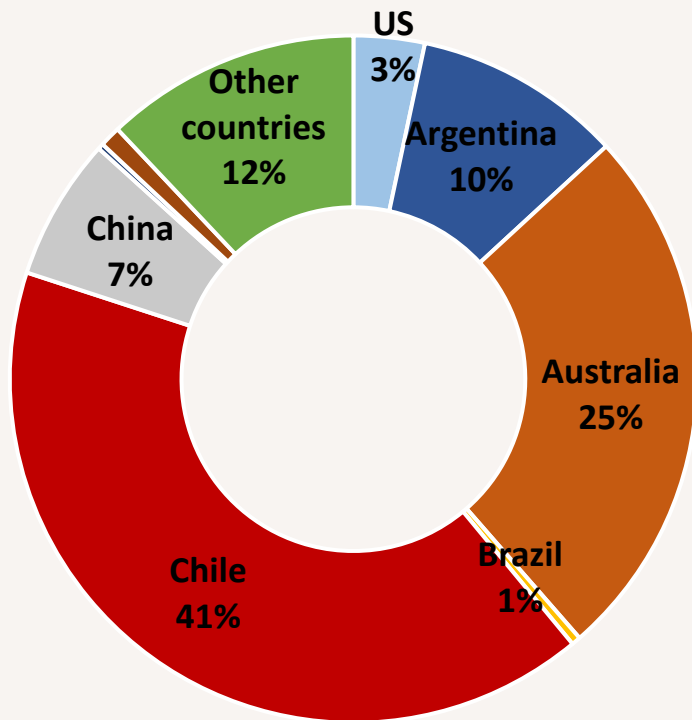


**Note:** Assumptions: project in rural location, necessity of an Environmental Impact Evaluation.  
**Source:** “Analysis of Priority Sector Permits for Investment in Chile” study, National Evaluation and Productivity Commission (2023).



# Lithium demand is booming. Chile, the second-largest world producer, leads in reserves internationally

Lithium reserves by country in 2023 (percentage of total reserves)



Top prospects regarding their geological potential to host lithium projects (\*)

### SALARES ZONA NORTE

- Atacama
- Tara
- Aguas Calientes Norte ó 1
- Pujsa
- Loyoques o Quisquiro
- Aguas Calientes Centro ó 2
- El Laco
- Aguas Caliente Sur ó 3

### SALARES ZONA SUR

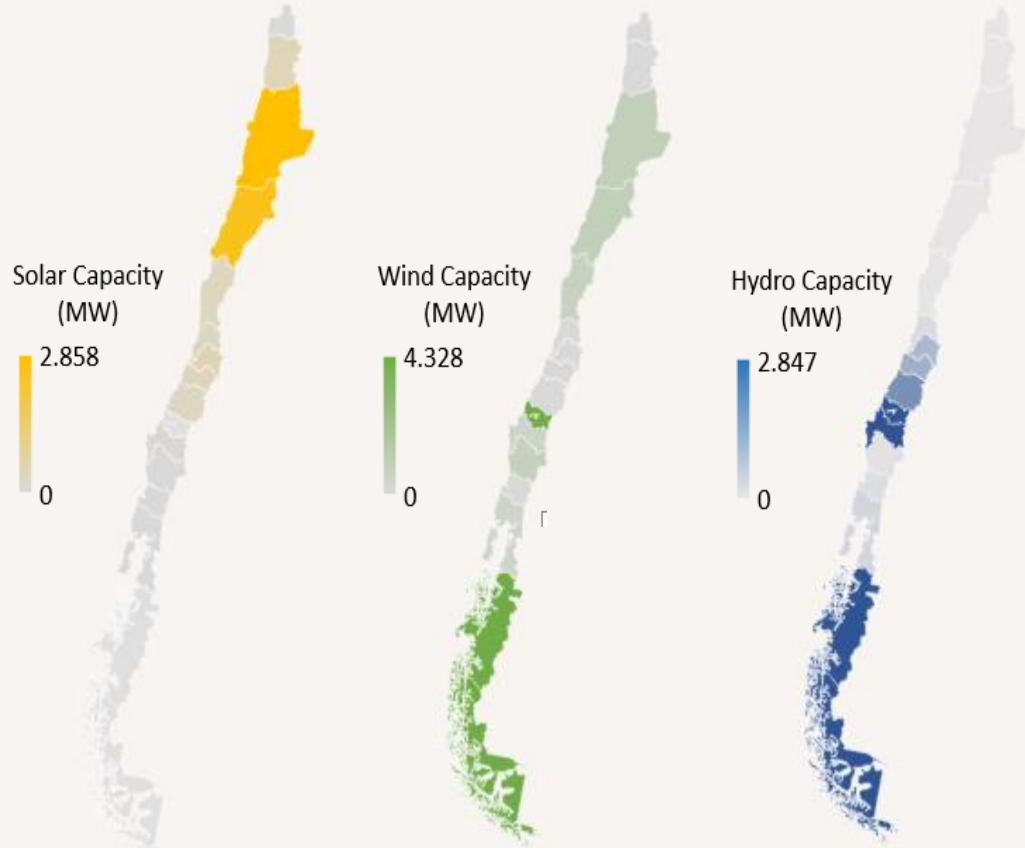
- Aguas Calientes Sur Sur ó 4
- Pajonales
- Gorbea
- Agua Amarga
- La Isla
- Aguilar
- Parinas
- Grande
- Pedernales
- Maricunga

**Note:** (\*) The National Geology and Mining Service (SERNAGEOMIN) identified 18 salt flats located in the regions of Antofagasta and Atacama as the top prospects regarding their geological potential to host lithium projects.

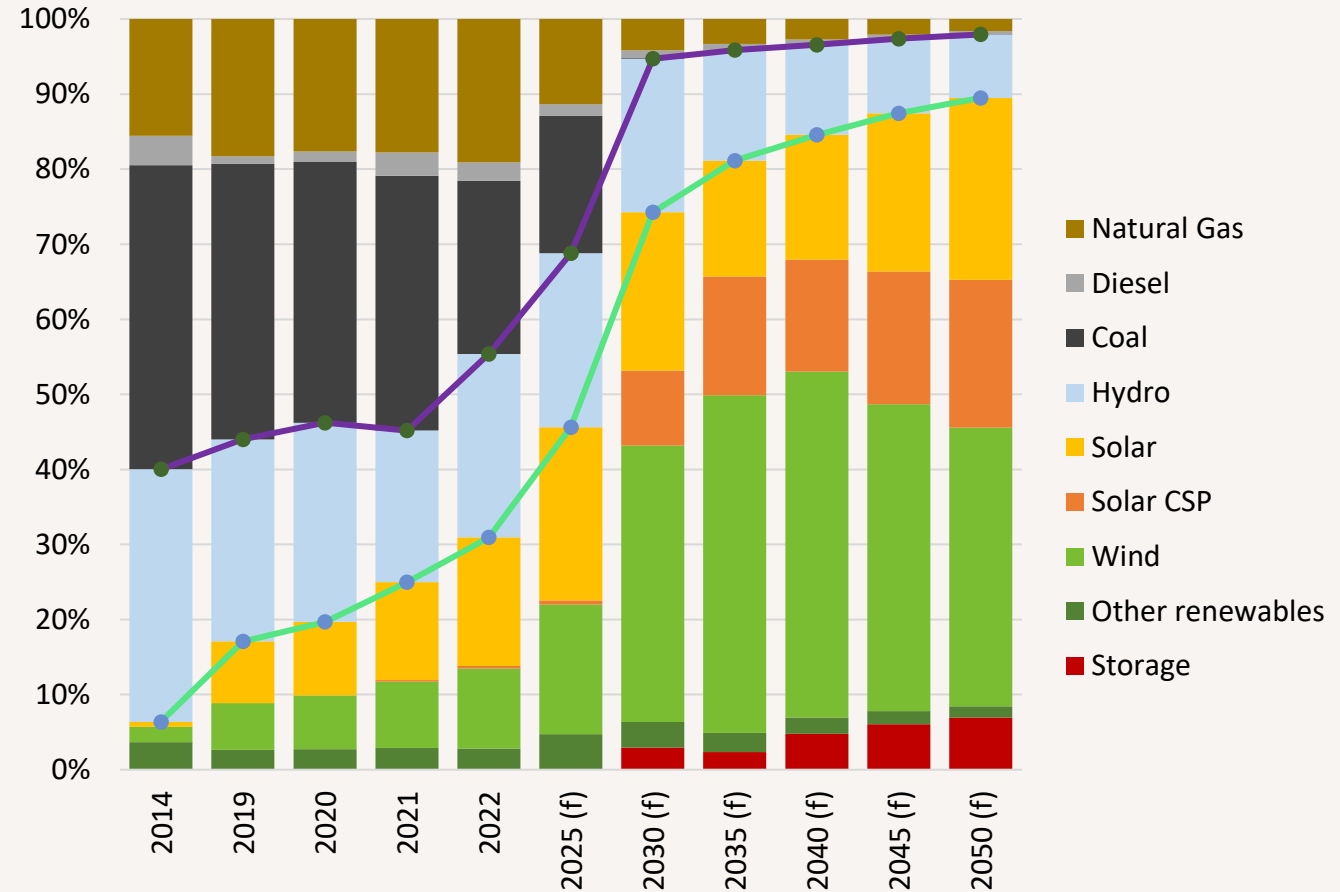
**Source:** United States Geological Survey (USGS), National Geology and Mining Service (Sernageomin), [www.gob.cl/litioporchile](http://www.gob.cl/litioporchile) and Ministry of Finance.

# Chile is committed to confronting climate change by making significant changes to its energy matrix. Chilean renewable installed capacity already has a great potential to become the main energy source in the country

Gross Power Installed Capacity by Region in 2022 (1)



Electricity generation by technology and NCRE participation



**Note:** (1) Maximum gross power installed in the National Electric System. It considers operational power plants as well as those in the testing phase. (f): forecast.

**Source:** National Electric Coordinator and Ministry of Energy.

# The current administration is working on a Green Hydrogen Action Plan 2023-2030. More than 50 projects across the country are under study while several pilot initiatives are starting to operate

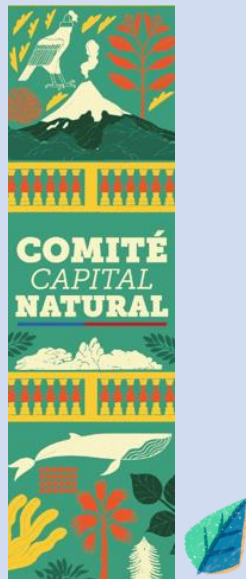
## Some impulse measures in the GH2 Action Plan

- Development of environmental baselines
- US\$ 1 bn financial facility with WB, IADB, KfW, EIB and CAF funds, to provide credit, risk coverage
- Magallanes GH2 Regional Transformation and Green Corridors project
- National Plan for the Promotion of Green Hydrogen Production in Fiscal Territory (*Ventana al Futuro*)
- Ports plan, with involvement of regional governments, ENAP and National Government





# Financing the green and greening the financial system





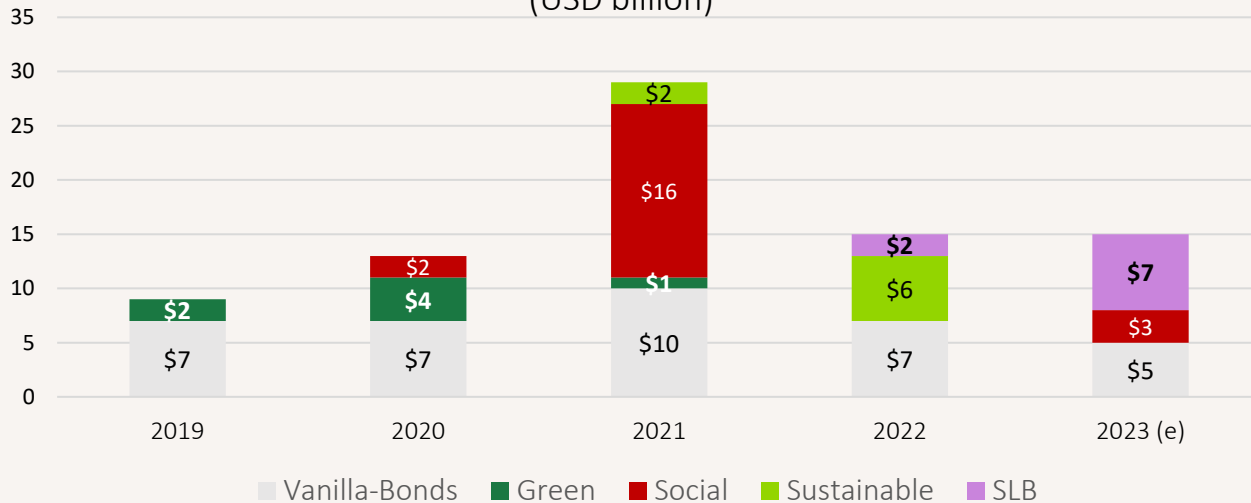
- The Ministry of Finance has the mandate to elaborate the Financial Strategy to accomplish the NDC commitments and more concretely, to implement the measures embedded in the Long Term Climate Strategy.
- Chile's Financial Strategy has been recognized as comprehensive and successful in boosting the greening of the Chilean financial system, as well as developing innovative instruments to finance sustainable activities. It is being updated.
- Mobilizing financing towards sustainable activities is a global goal as well as a challenge and Chile is following a consistent path in which both the public and private sector play a role.
- Sovereign green bonds, together with social, sustainable, and most recently the sustainability-linked bonds (SLBs) account for more than one third of the total stock of public debt (over US\$ 42bn). The aim is to reach 50% by 2026.
- Innovation and leadership has granted a more diverse investor base, that is willing to pay a premium when the instruments are attractive enough in terms of novel and ambitious key performance indicators. The latest SLB issuances that combined climate and gender KPIs exemplify this with a demand that was sixfold the offered amount.
- To avoid greenwashing and offer a transparent, objective and credible tool to classify activities according to their contribution to sustainable objectives, we are developing a Taxonomy for sustainable activities through 2024.
- Greening the financial system and boosting potential growth in a sustainable way should not be at the expense of nature and its biodiversity. Part of the “measure of our ignorance” comes from disregarding our natural capital.

# Leveraging Government Financing to Address Climate Change & Drive Sustainable Growth



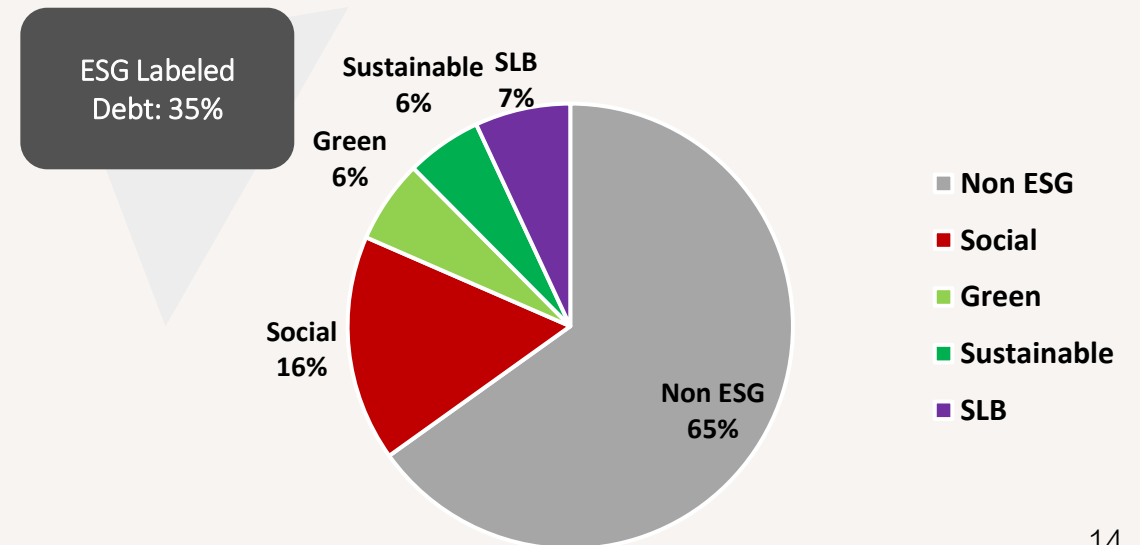
- Labelled bonds have become fundamental for Chile’s financing strategy.
- Since 2018, Chile has sought to promote the development of ESG instruments to attract foreign investment and support the country’s sustainable infrastructure needs, while diversifying the investor base.
- Chile is a clear leader in the sovereign ESG-bond market, having pioneered numerous innovative transactions in both international and local currencies.
  - In June 2019, Chile became the first country in the Americas to issue a Green Bond.
  - In February 2022, Chile became the first sovereign issuer in the world to issue a Sustainability-Linked Bond (SLB), drawing notable investor interest and setting a best-in-class market standard for Sovereign SLBs.
  - In June-July 2023, Chile became the first sovereign to include social/gender equality target to new SLB issuance (domestic and foreign currency).

Historical ESG Issuances  
(USD billion)



Source: Ministry of Finance

Stock as of September 22, 2023  
(% of Total of Central Government Debt)







## Mobilizing Financial Resources for Net Zero Transition Needs Transparent and Credible Information on "Green" Definitions

- The Ministry of Finance leads the creation of a Taxonomy–classification system- of sustainable activities.
- This taxonomy acts as a public guide, aimed at curbing greenwashing and boosting productivity by directing investments towards resilient sectors, and enhancing the country's global competitive stance
- Our taxonomy development seeks alignment with global standards, while being adapted to our specific needs, including sectors like mining.
- The structural elements of the taxonomy were introduced in August. Upcoming developments include the establishment of a robust governance, with key stakeholders, coordinated by the Ministry of Finance.
- Development will be phased and meticulously coordinated, engaging both the financial and non-financial private sector.

Construyendo un lenguaje común  
para la sostenibilidad:

**Estructura del Sistema de Clasificación  
o Taxonomía de Actividades  
Económicas Medioambientalmente  
Sostenibles para Chile**



Ministerio de Hacienda  
Agosto 2023



## We cannot take into consideration what we cannot measure: valuing our natural capital is crucial for sustainable growth

- **Natural Capital Committee's Role.** Advises the President in matters related to the measurement, valuation, protection, restoration and improvement of Chile's natural capital.
- **Natural Disaster Exposure:** Chile's vulnerability to wildfires and floods demonstrates the urgent need for valuation of natural capital to quantify damages and design public policy.
- **Ecosystem Deterioration.** Deterioration of ecosystems and biodiversity reduces economic and human well-being, limiting Chile's growth potential.
- **Natural Capital and productivity.** Not including natural capital can lead to skewed productivity growth estimates, affecting policy decision. Accurate accounting is especially crucial for economies dependent on nonrenewable resources.
- **Committee's Role in H2V Development.** The Natural Capital Committee is crucial in developing H2V and its derivatives. It will provide key information, emphasizing the need to account for nature's finite resources to mitigate industry impact.
- **Greening the financial system & Collaborative Strategy.** Achieving a green financial system require a collaborative approach that respects natural capital and engages diverse stakeholders, at all levels throughout the territory.



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