

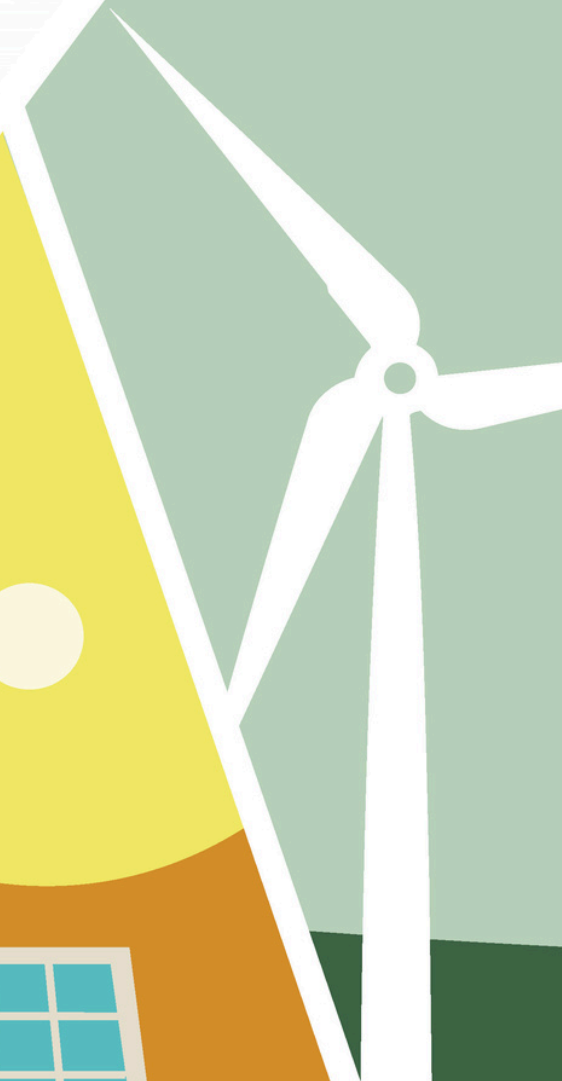
STATE OF FOSSIL FUELS IN CHILE

A snapshot of the current landscape to support Chile's transition toward energy security and sovereignty by shifting away from fossil fuels.

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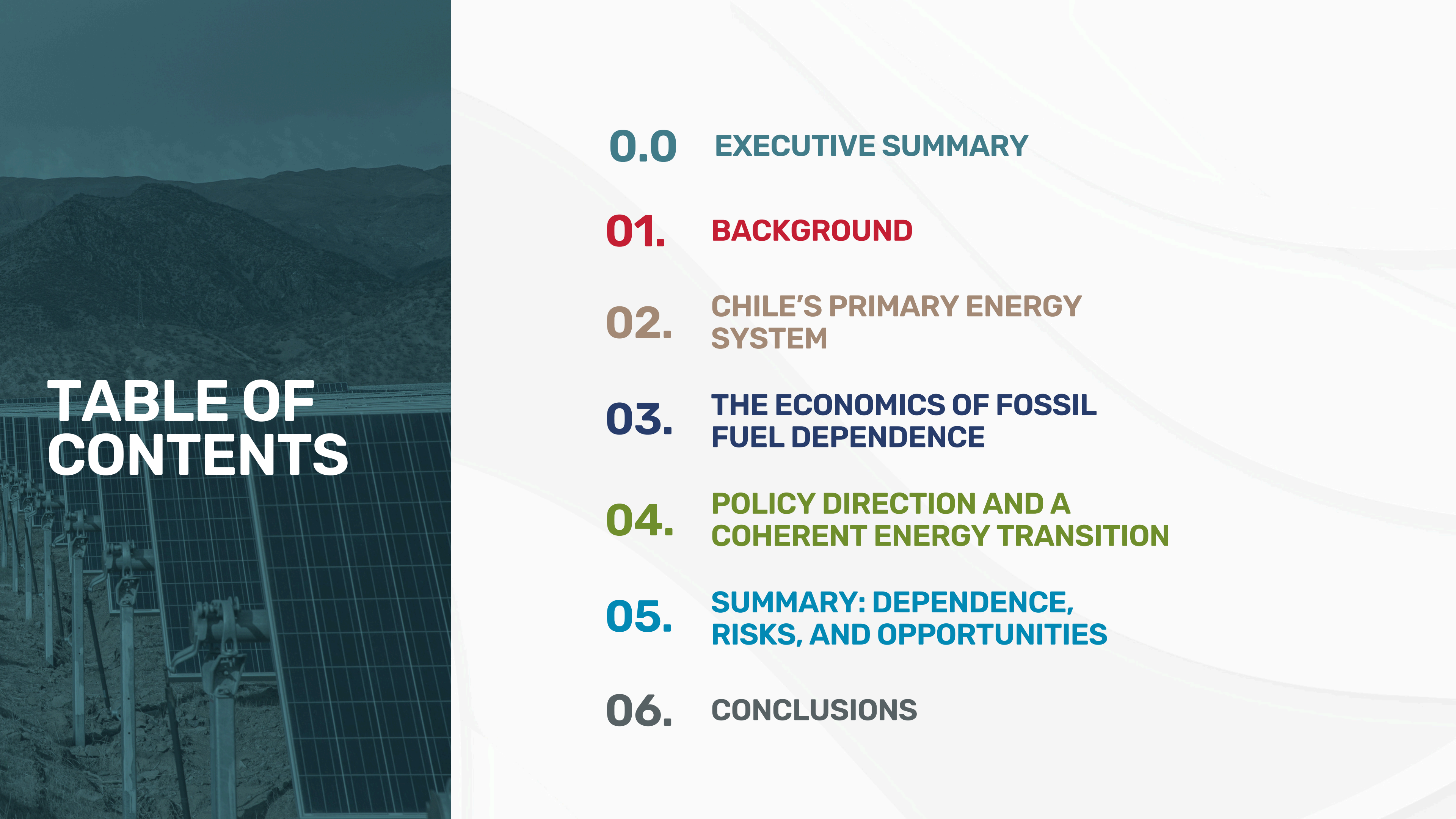


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Executive Summary

- Renewable energy has not replaced fossil fuels; it has grown alongside them.

Despite having an electricity system that is more than 60% renewable, Chile consumed 29% more energy from fossil fuels in 2024 than it did in 2000.

- The energy system is not defossilizing; it is redistributing its dependence across different fossil fuel sources.

Today, Chile has neither a fossil fuel phase out strategy nor a reduction plan in its dependence on fossil fuels; instead, fossil fuel use has shifted across sectors.

- The cost of Chile being Latin America's most dependent country on imported fossil fuels

Chile spent more than US\$12 billion on fossil fuel imports in 2025 (and **US\$14.6 billion in 2024, equivalent to 5.1% of GDP**). Combined with a concentrated supplier base, this exposes the country to significant geopolitical and economic vulnerabilities.

- There is no policy instrument to assess the state of fossil fuel phase out in Chile

Although Chile has some decarbonization targets, they are not integrated into a unified fossil fuel phase out strategy.

- An opportunity for Chile

What could distinguish Chile as an international leader is showing that renewable energy expansion can be translated into a consistent decrease in fossil fuel demand.





| 01 BACKGROUND

Chile's energy landscape and the scope of the study

Renewables | Assessment | Objective

Objective

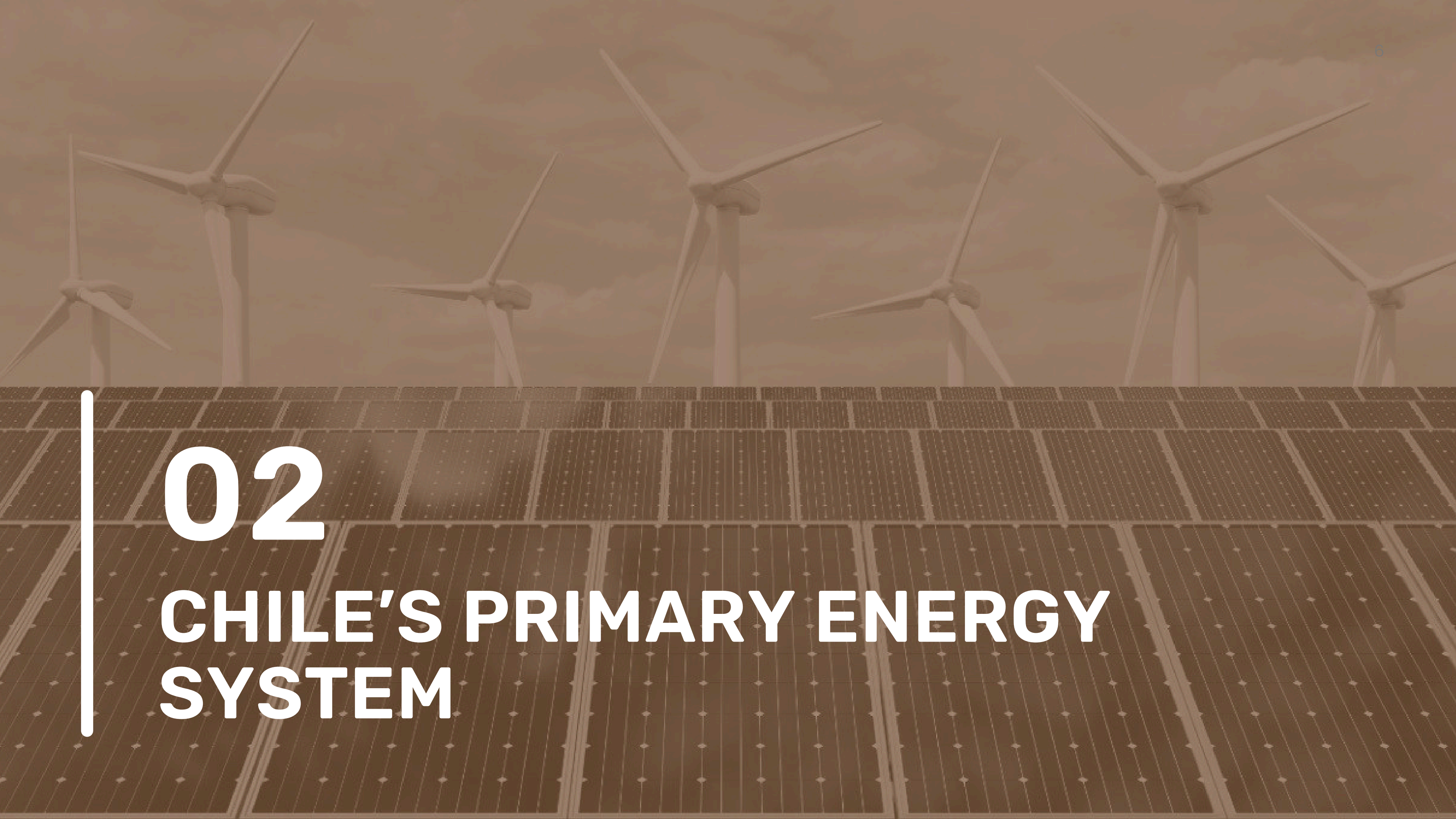
To assess the current state of Chile's fossil fuel phase out process, identify structural gaps, and provide a technical basis for evaluating whether the country is on track to meet its climate commitments.

Renewable electricity, fossil-based energy system

- Chile ranks among the world's top 25 countries in the Energy Transition Index. Renewable sources account for more than 60% of national electricity generation (68% in 2024).
- However, the country's primary energy system, which includes transport, industry, and heating, continues to rely on fossil fuels.

Lack of a comprehensive assessment

- Chile has established clear carbon neutral goals and decarbonization policies. However, there is no comprehensive assessment to evaluate whether these policies are sufficient to meet the commitments and effectively achieve independence from fossil fuels.
- There is also no clarity on the contribution of each fuel to the reduction of fossil fuel use, or on how the transition is being coordinated across sectors.



02

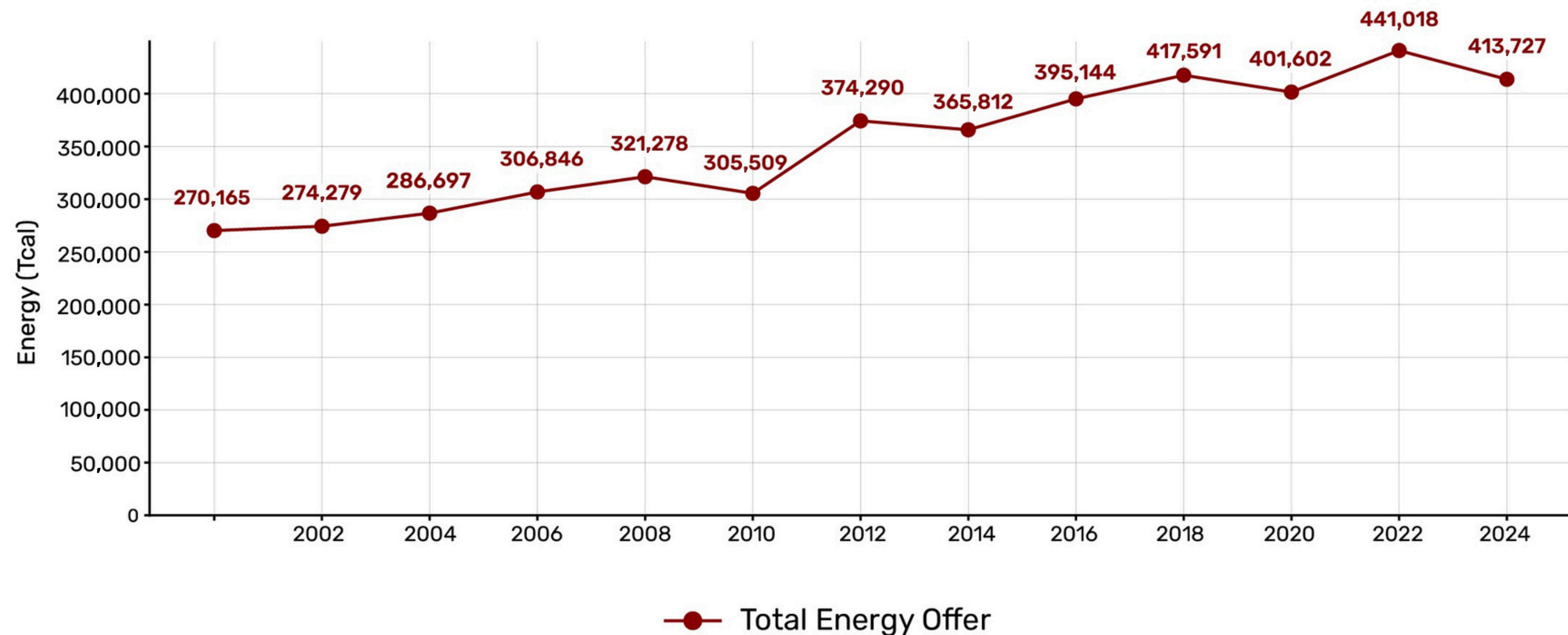
CHILE'S PRIMARY ENERGY SYSTEM

Energy supply

Energy supply has increased by 53% since 2000

The energy supply in Chile has stabilized at historically high levels.

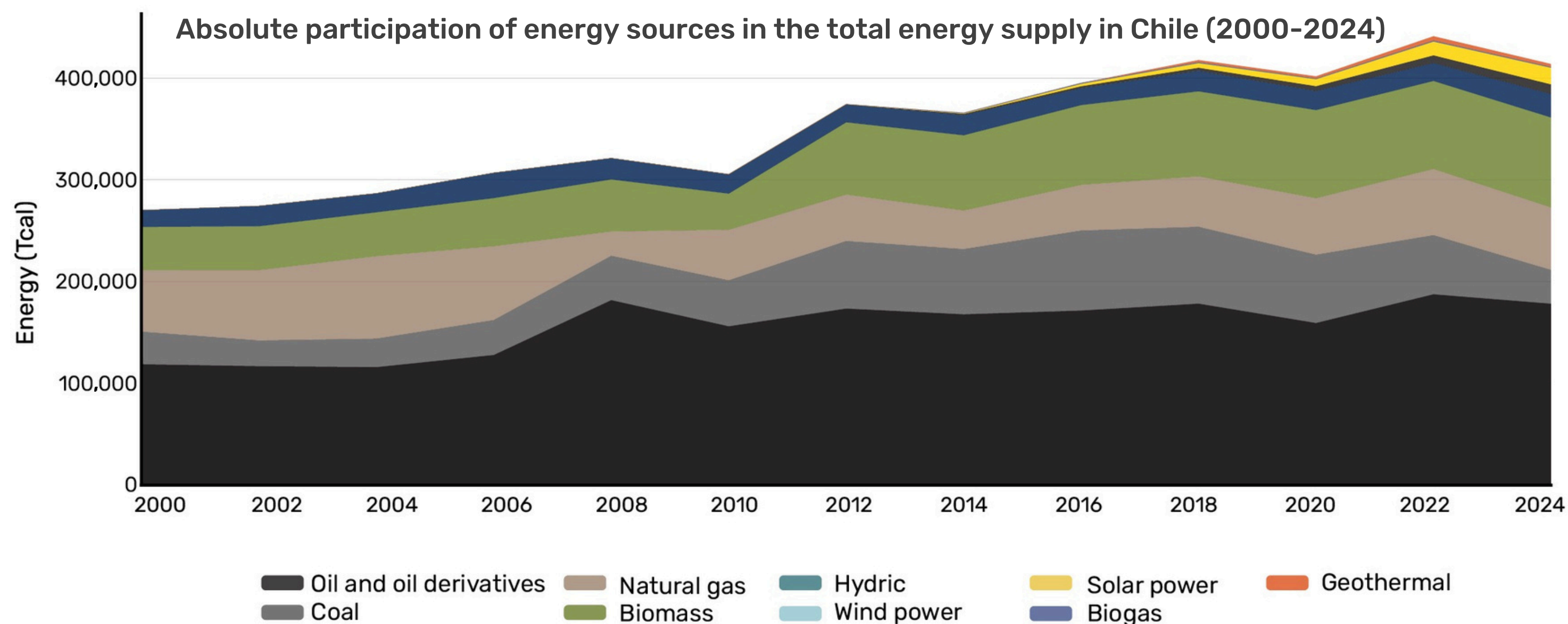
Trend in Chile's total energy supply (2000-2024)



Energy Matrix

The total supply of fossil fuels increased by 29% between 2000-2024

Even in 2024, oil dominates fossil fuel supply in Chile, and coal remains at levels close to those of the year 2000.

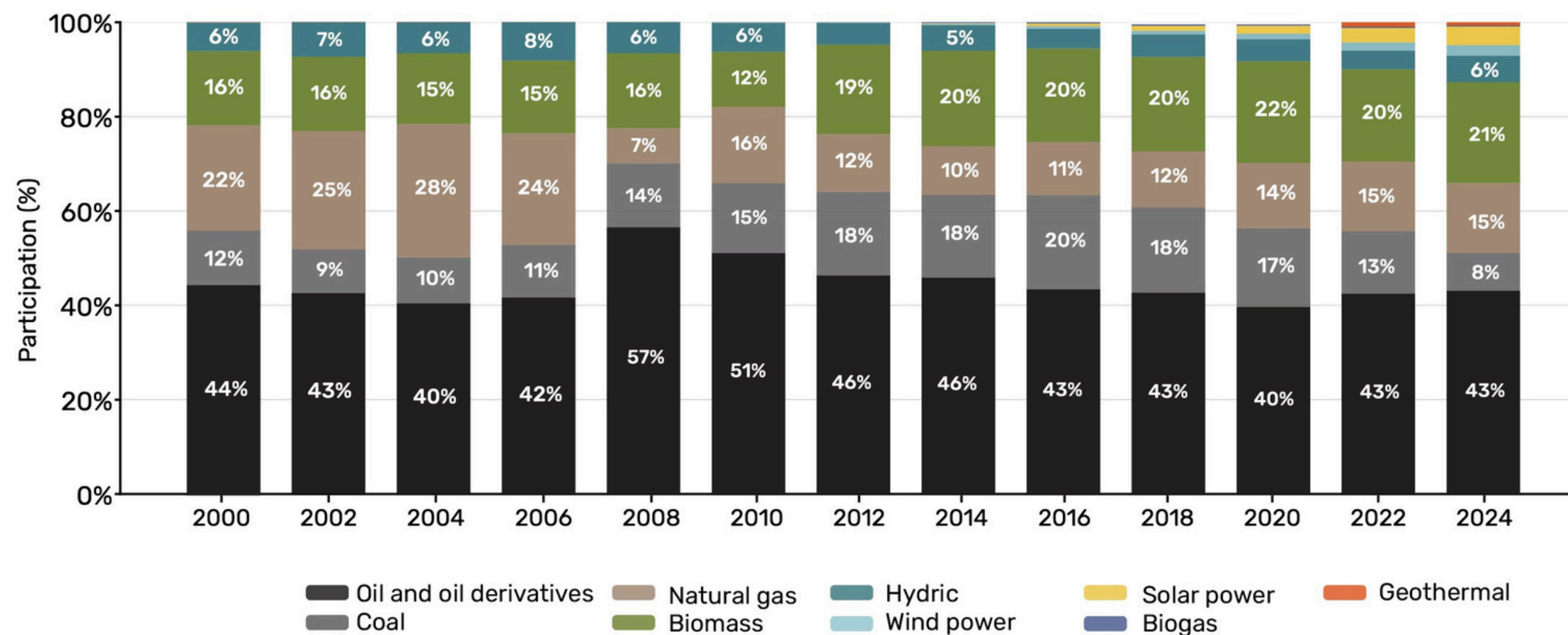


Participation in the Energy Matrix

Fossil fuels account for 66% of the energy supply

Oil and its derivatives have maintained a stable participation for over 25 years.

Relative participation of energy sources in the total energy supply in Chile (2000-2024)



Participation 2024

13%

Renewable energy

21%

Biomass

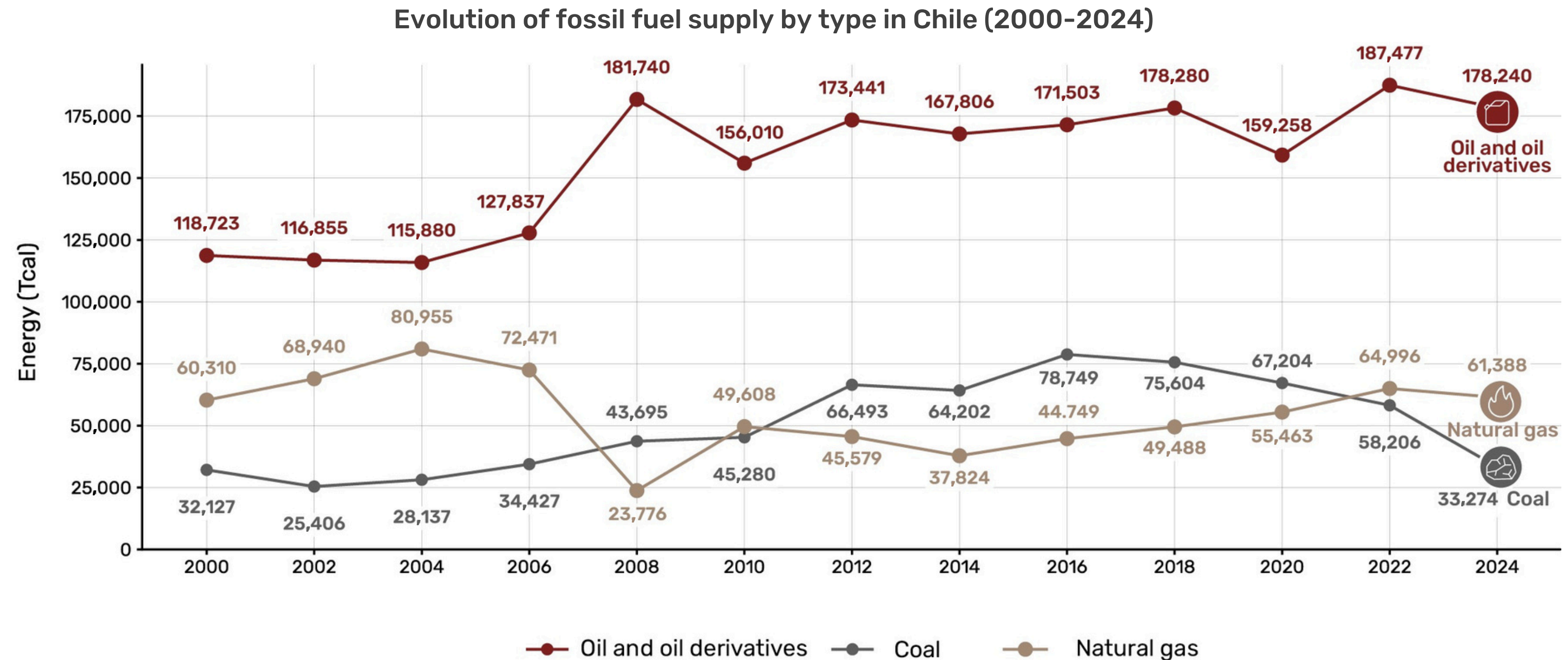
66%

Fossil fuels

Trend of the fossil fuel supply

Oil and its derivatives increased their total supply by 50%

After 25 years of fluctuations, natural gas has returned to its original level. The space created by the decline in coal has been filled by an increase in natural gas supply.



Source: National energy balances available in Energía Actual.

In summary**Key points**

Fossil fuel supply in Chile between 2000 and 2024.

Fossil fuel supply increase by over 29%

The drop in market share, from 78% to 66%, reflects a difference in pace compared to renewables, but not a reduction in volume of fossil fuels consumed.

Renewables up by 139%

But ERNC + Hydro represent only 13% of the energy matrix.

Oil +50%

Supports the structural floor of fossil fuel dependency. It is the only one of the three that hasn't decreased.

Coal +4%

Chile has returned to coal consumption levels similar to those of 2000, but consumes less than half of what it did in 2019.

Gas +2%

The most erratic behavior of the three. After 25 years of fluctuations, it has ended up where it started.

More renewables and more fossil fuels

Lower market share does not equal lower consumption. The total usage of fossil fuels used in Chile has increased.

Coal & gas dynamic

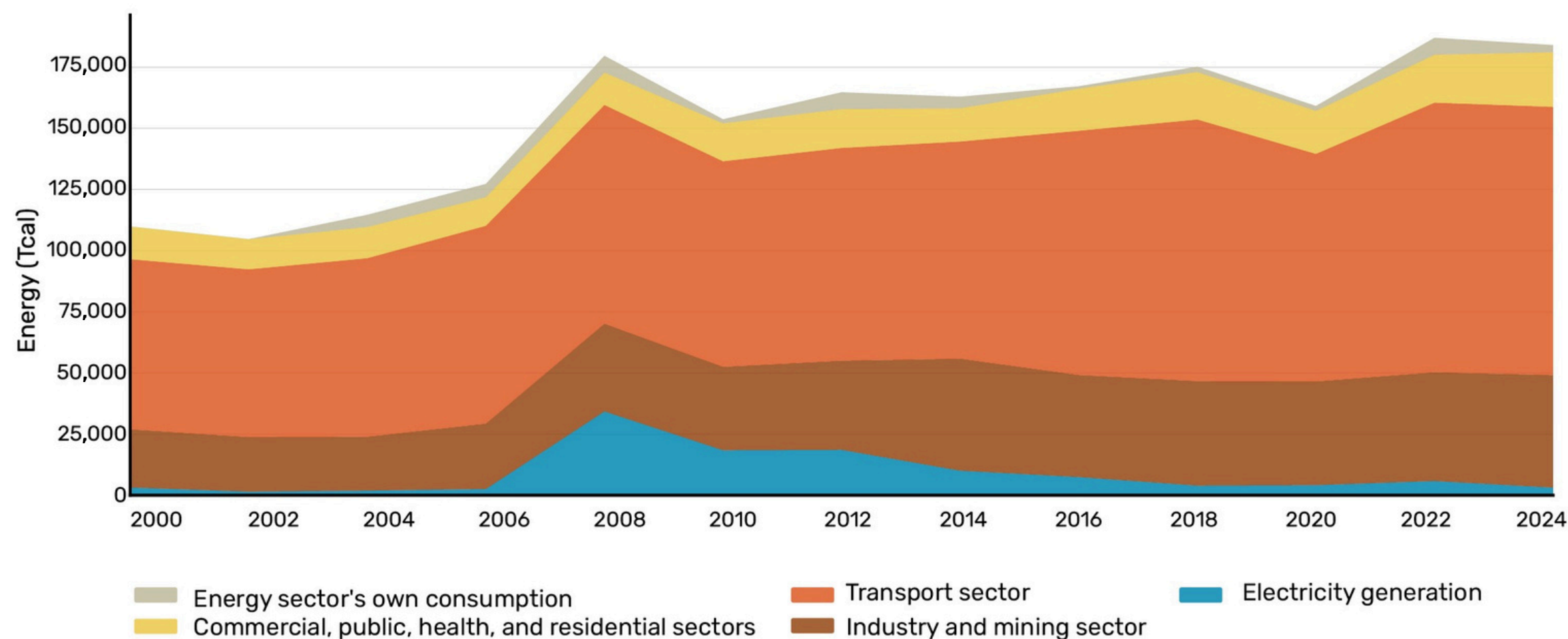
They replace each other. When coal decreases, gas increases, and vice versa. The exit of one has not reduced the country's fossil fuel dependency.

Oil uses

Oil in Chile is mainly consumed for transport

Its reduction depends on structural transformations in mobility, and subsequently, shifts in industry and mining.

Distribution of oil consumption by sector Chile (2000- 2024)



Consumption 2024

59.6%
Transportation

25.0%
Industry and Mining

12.2%
Commercial, public, health,
and residential sectors

1.7%
Electricity generation

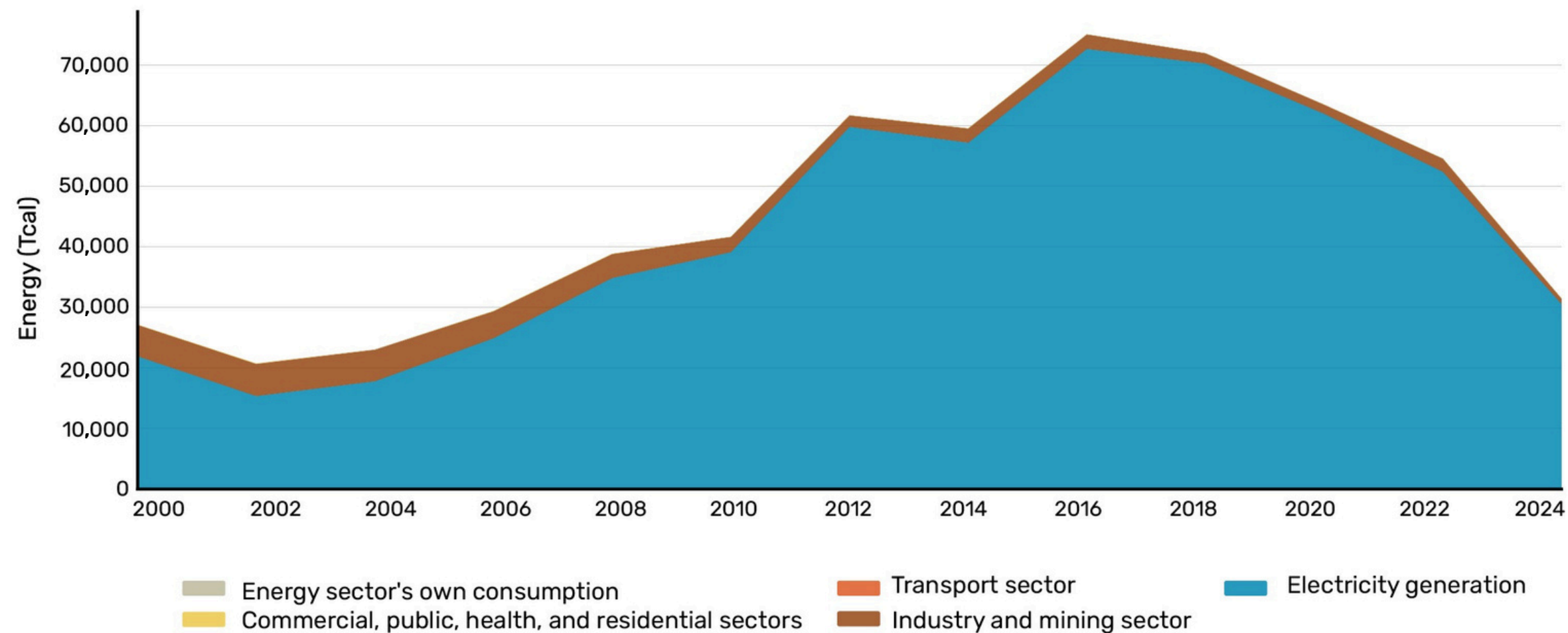
1.6%
Energy sector's
own consumption

Coal uses

Centered in electricity

Its main reductions have been due to changes within electricity generation.

Distribution of coal consumption by sector in Chile (2000-2024)



2024 Consumption

97.2%

Electricity generation

2.8%

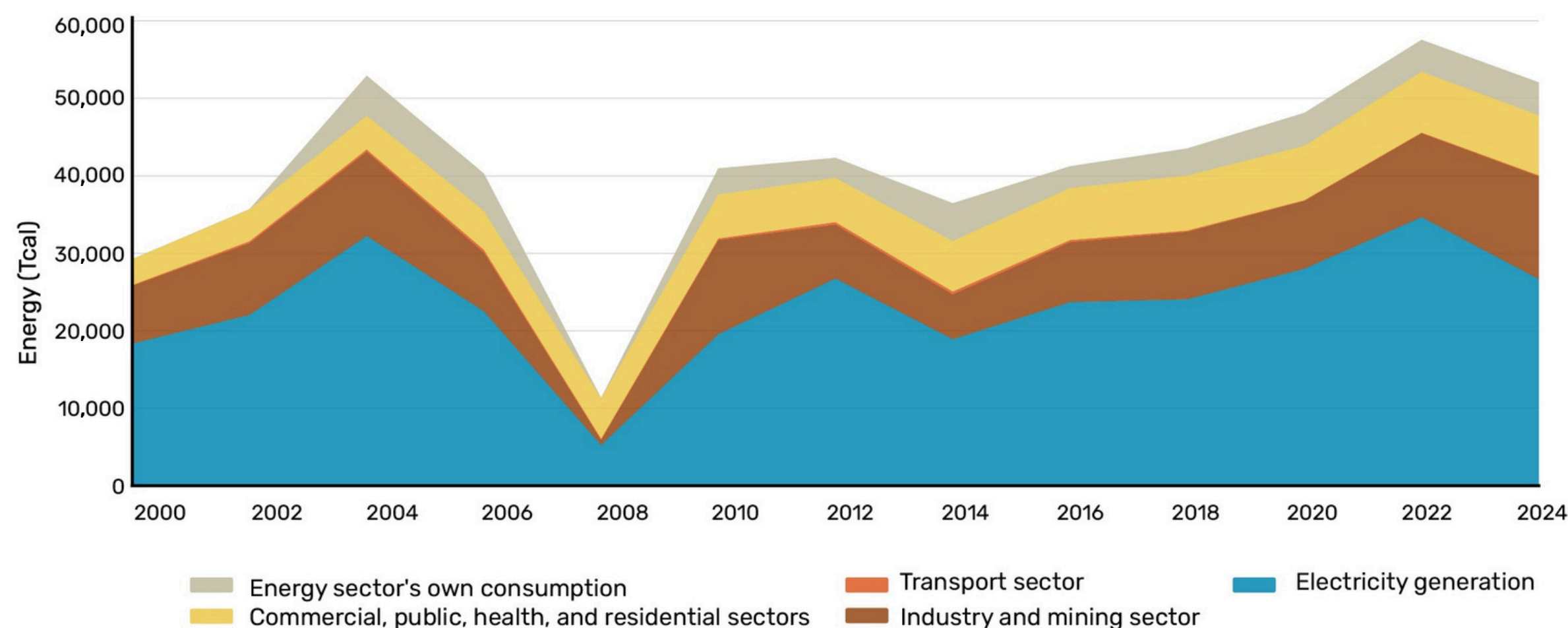
Industry and Mining

Natural gas uses

Predominantly electric, but also diverse

Variations in natural gas consumption reflect the substitution between fossil fuels, specially by the replacement of coal.

Distribution of natural gas consumption by sector in Chile (2000-2024)



Source: National energy balances available in Energía Abierta.

Consumption 2024

51.2%

Electricity generation

25.5%

Industry and mining

14.9%

Commercial, public, health, and residential sectors

8.1%

Energy sector's own consumption

0.2%

Transportation

In summary**Key points on fossil fuel uses**

Three fuels, three distinct challenges

Sectoral concentrations

Each fuel is anchored to a different sector, with different infrastructures, contracts, and actors. This makes the cost of a transition highly variable and dependent on where interventions occur. Reducing dependency requires transforming mobility, industry, and energy generation simultaneously.

Oil

Concentrated in transport (60%). Requires policies for structural change in mobility.

Coal

Concentrated in electricity generation (97%). Its decline responds directly to the closure of thermal power plants.

Gas

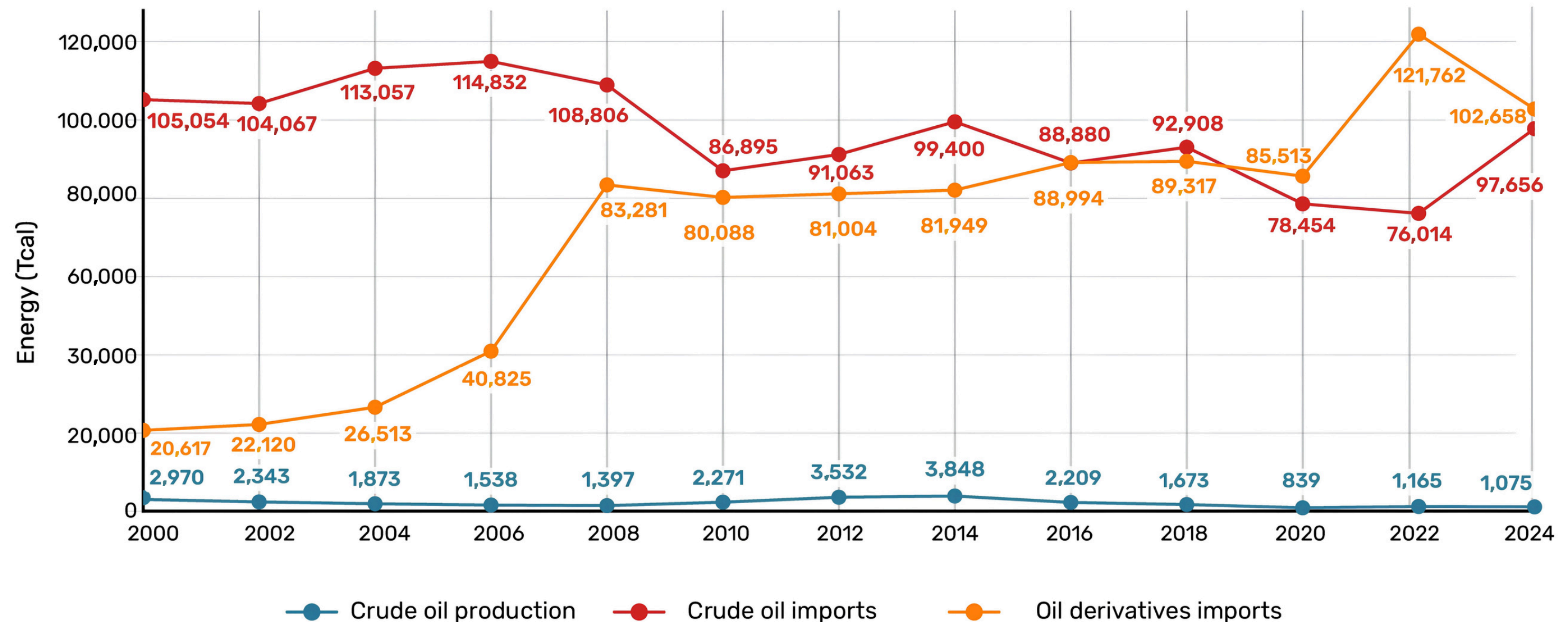
More distributed: electricity generation (51%) and industry. Requires interventions in both sectors simultaneously.

Oil production and imports

Since 2021, Chile has imported more oil derivatives than crude oil

Derivatives went from representing only 16% of oil imports in 2000 to quintupling and surpassing crude oil imports by 2024.

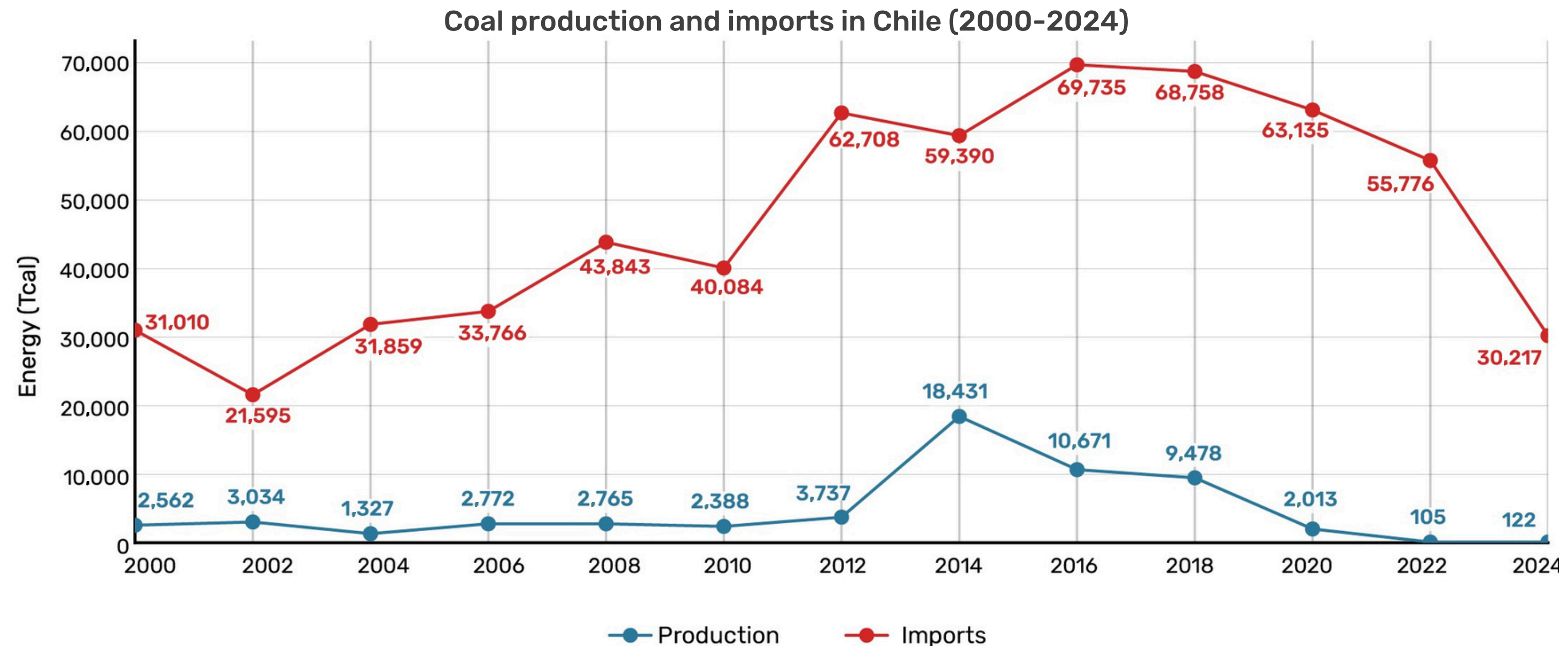
Oil production and imports in Chile (Crude oil and diesel), 2000-2024



Coal production and imports

Coal imports return to 2000 levels

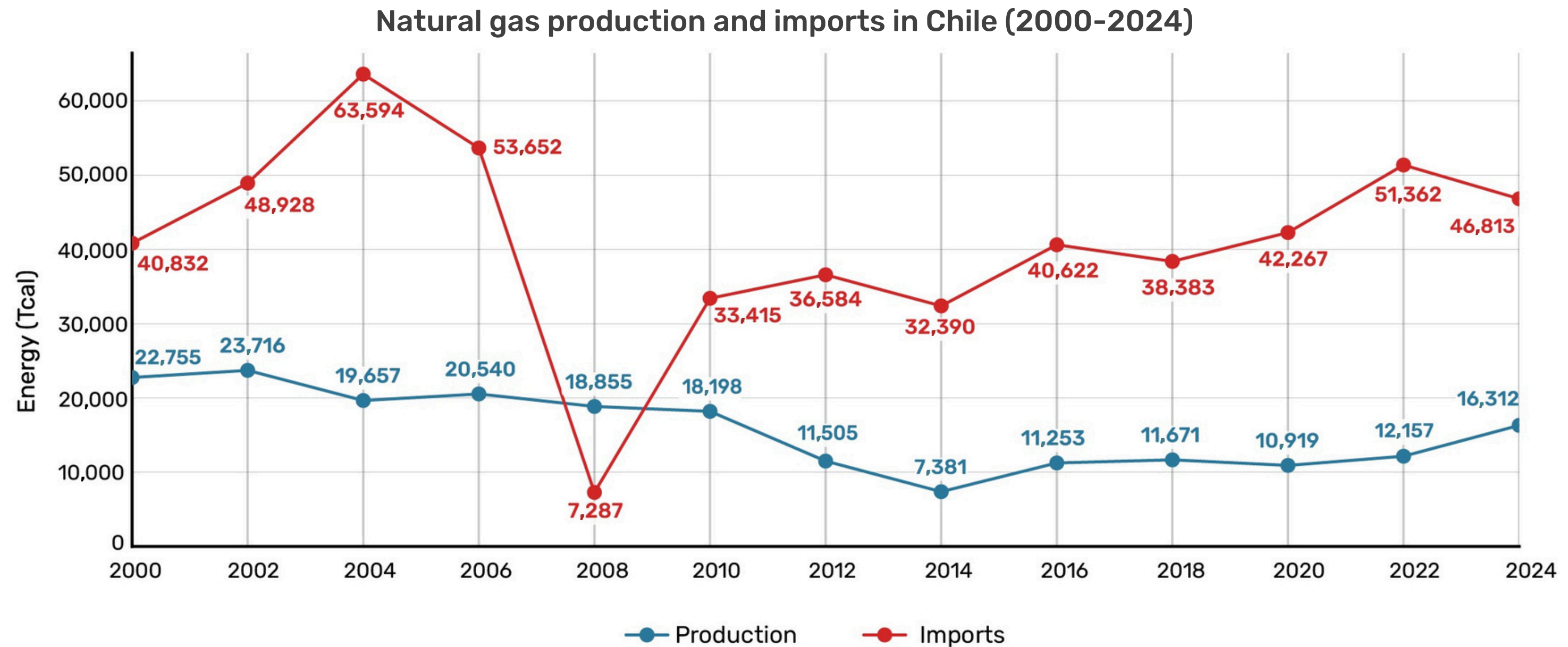
Coal imports doubled between 2000 and 2016 before declining steadily. Domestic coal production has virtually disappeared over the past two decades

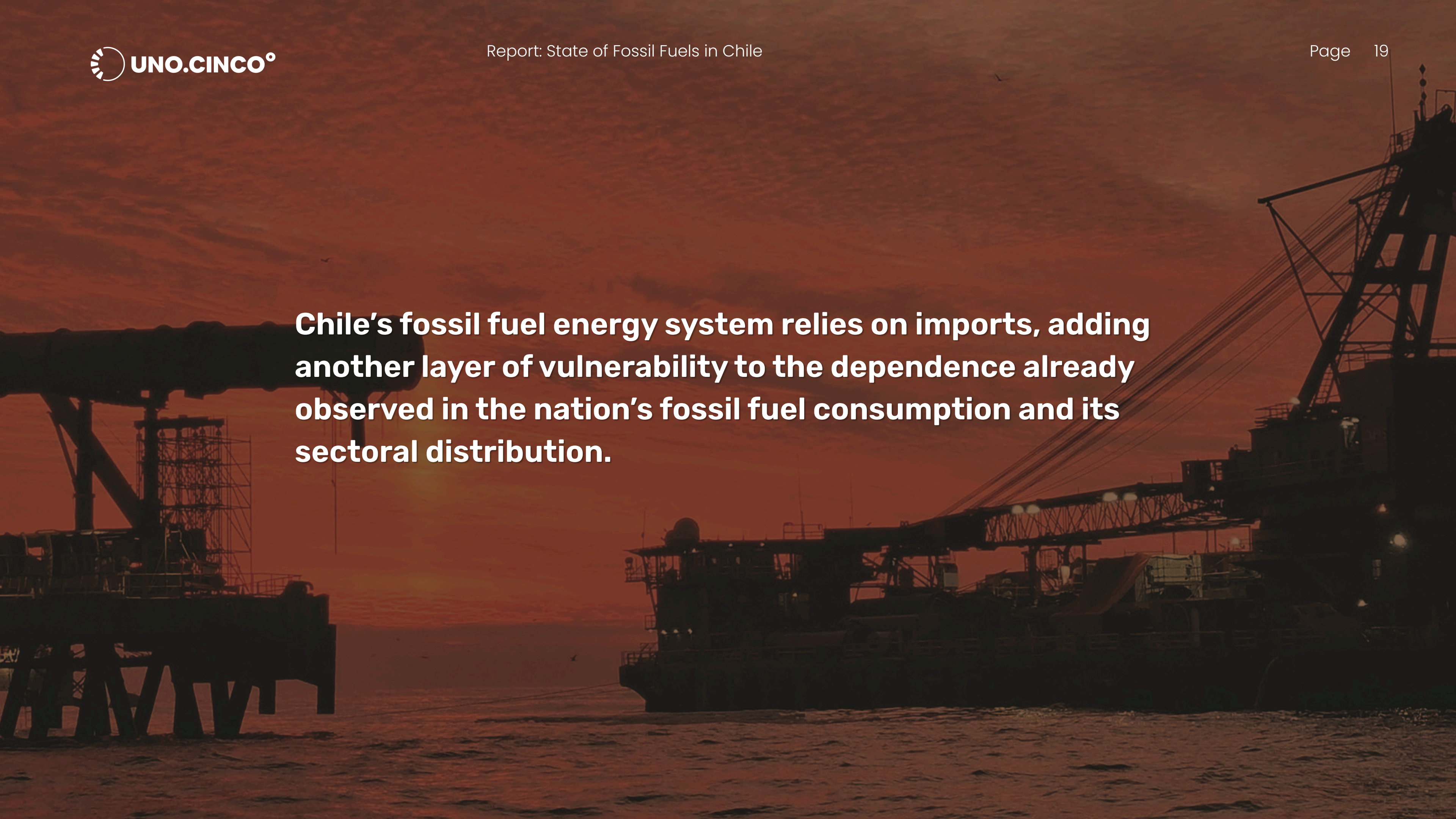


Gas production and imports

Between 2004 and 2008, gas imports fell by 88%

There was a sharp decline followed by a partial recovery. Imports returned to levels similar to those seen in 2000.



The background image shows an oil rig at sea during sunset. The sky is a deep orange-red, and the water is dark. The rig's structure, including cranes and platforms, is silhouetted against the bright sky. The sun is low on the horizon, creating a strong glow.

Chile's fossil fuel energy system relies on imports, adding another layer of vulnerability to the dependence already observed in the nation's fossil fuel consumption and its sectoral distribution.

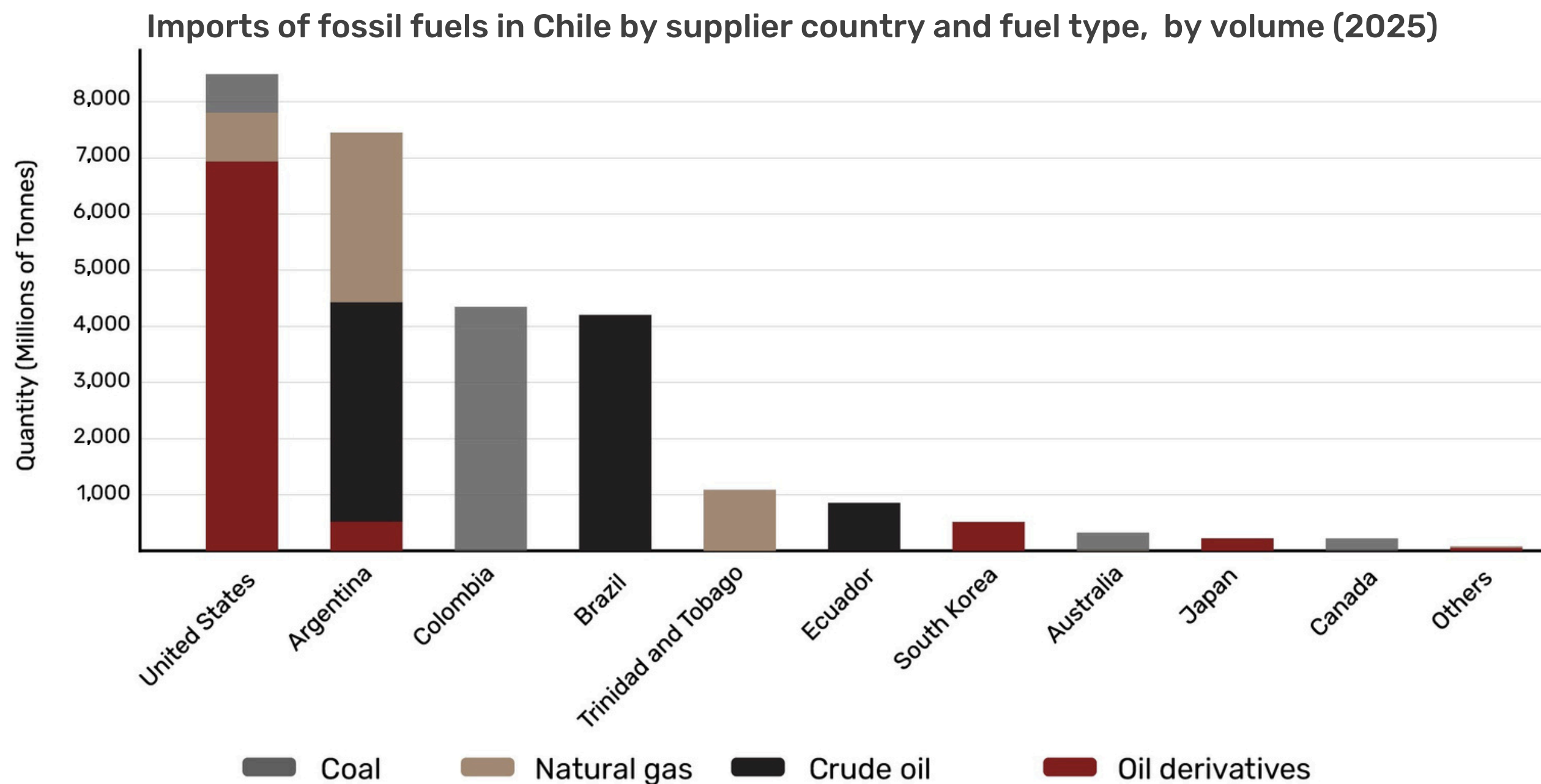
03

THE ECONOMICS OF FOSSIL FUEL DEPENDENCE

Fossil fuels suppliers in Chile, by volume

The US and Argentina represent more than 50% of total imports

Brazil, main supplier of crude oil; Colombia, of coal; Argentina, natural gas and crude oil; and the United States, of oil derivatives.

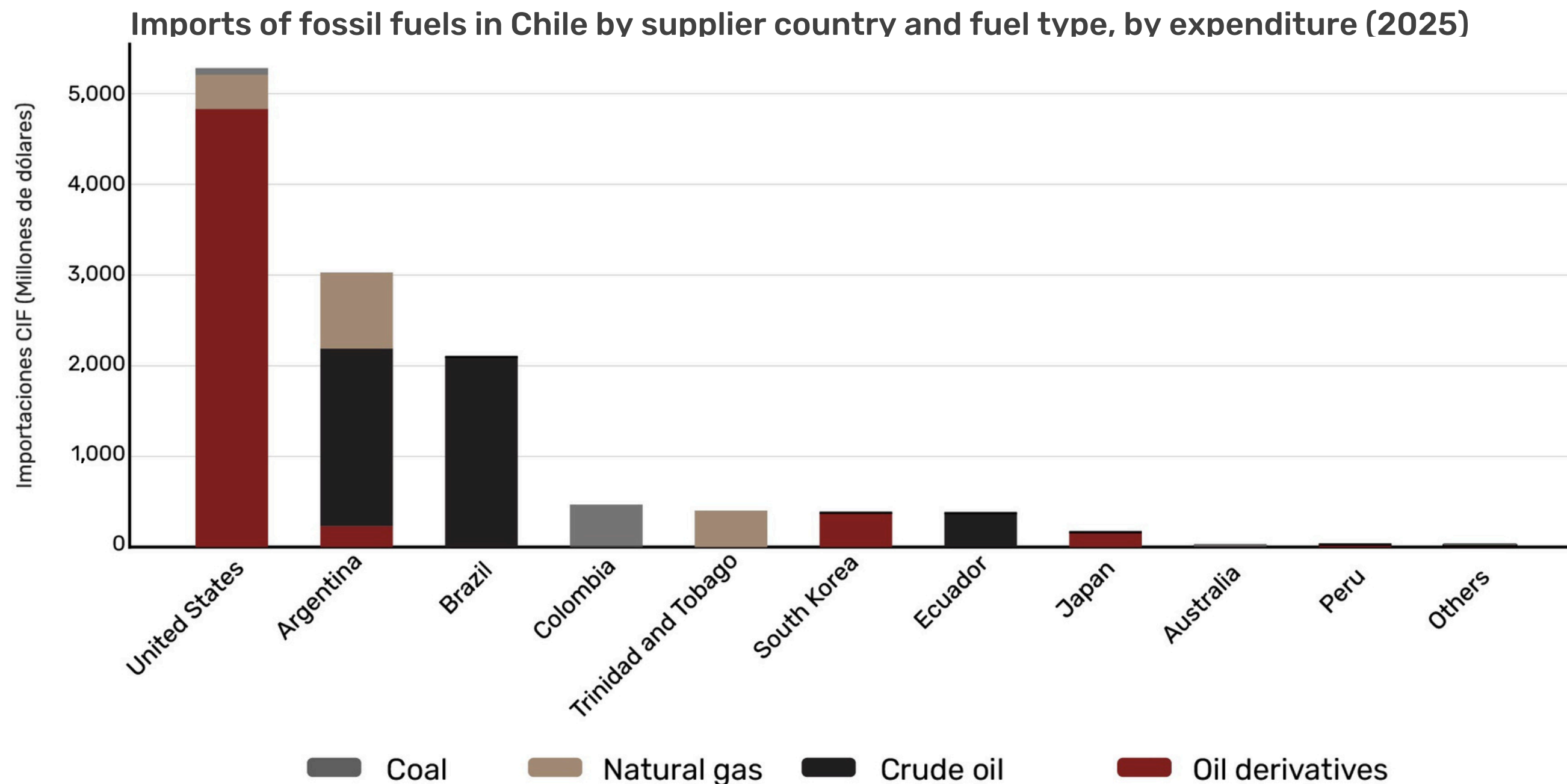


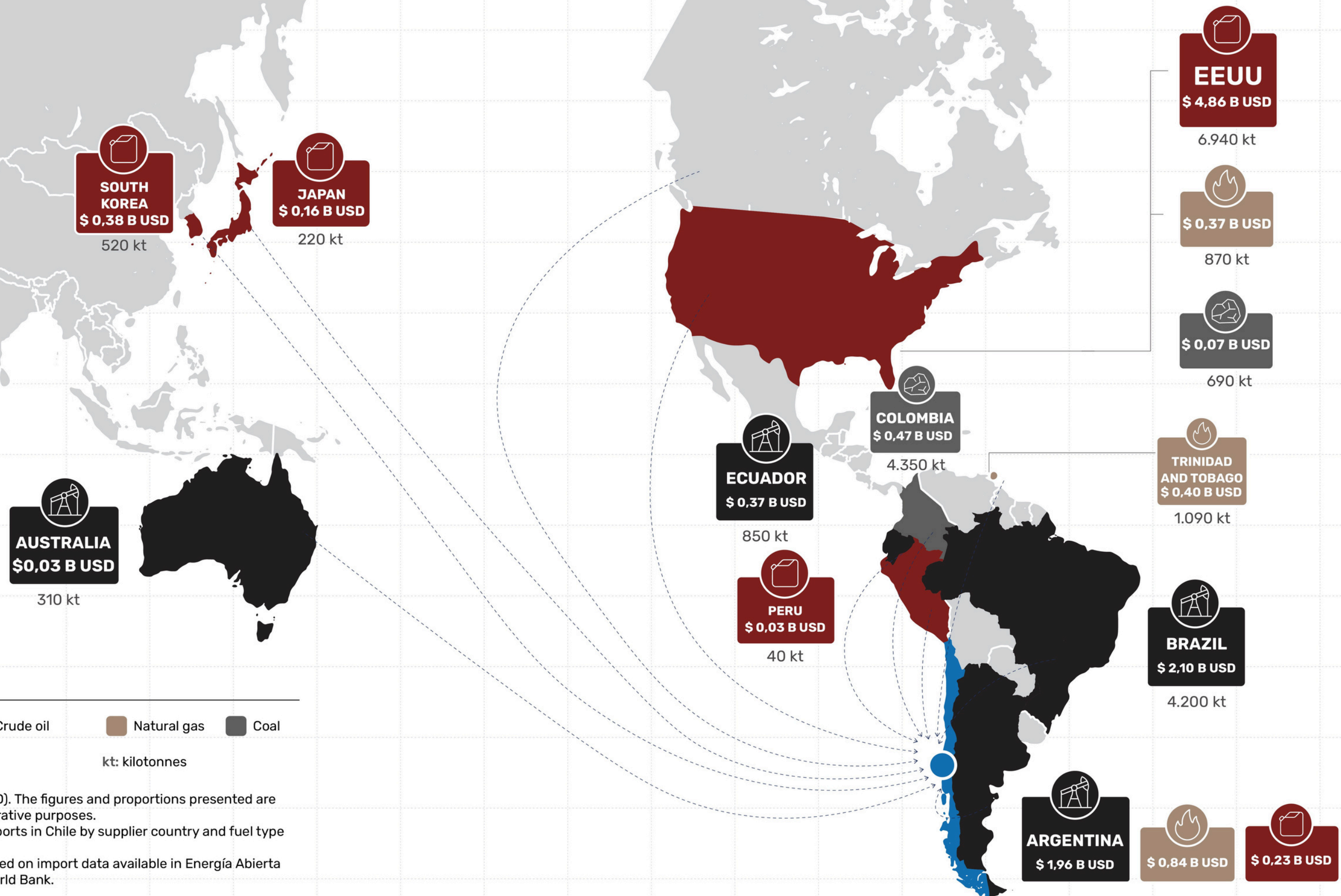
Source: National energy balances available in Energía Abierta.

Fossil fuel supplier in Chile, by expenditure

The United States accounts for 43% of import expenditure

Brazil, main supplier of crude oil; Colombia, of coal; Argentina, natural gas and crude oil; and the United States, of oil derivatives.





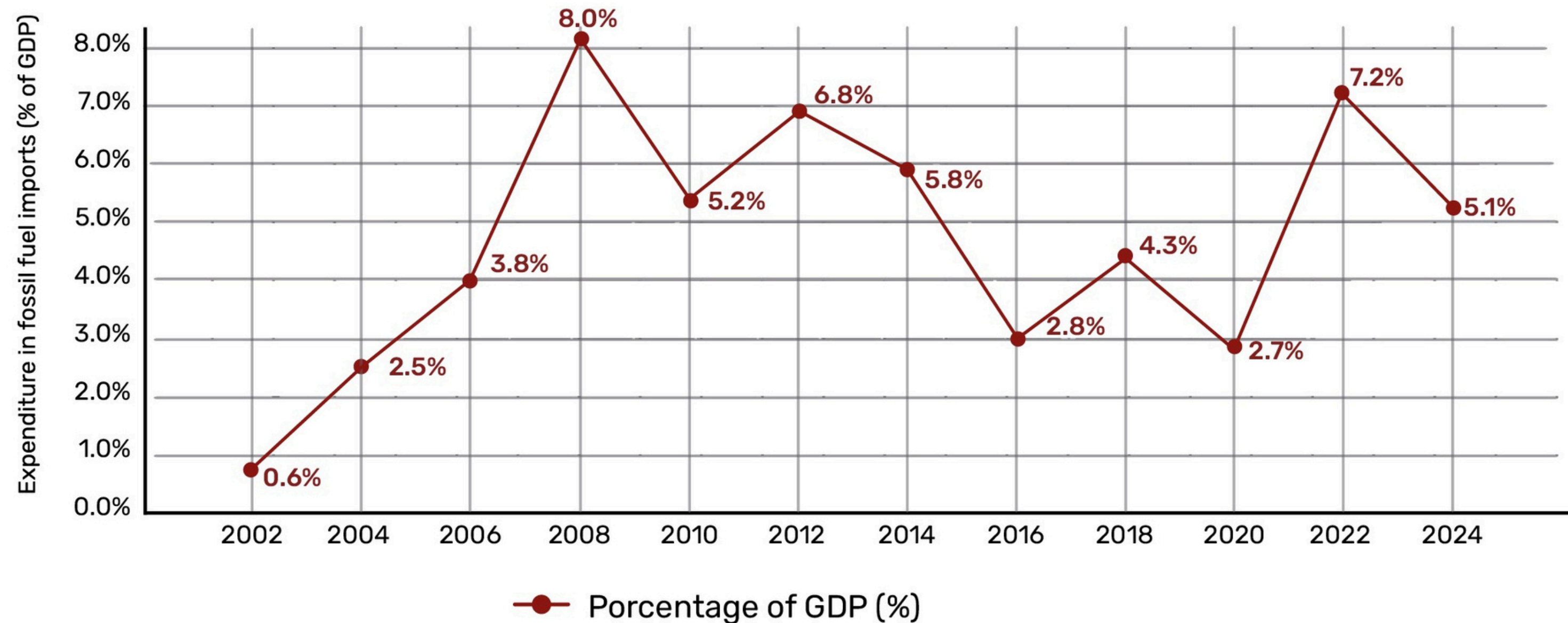
Value expressed in U.S. Dollars (USD). The figures and proportions presented are approximate and provided for illustrative purposes.
 Figure 1. Spending on fossil fuel imports in Chile by supplier country and fuel type (2025).
 Source: Prepared by the author based on import data available in Energía Abierta and GDP data available from the World Bank.

Expenditure on fossil fuel imports in Chile as a share of GDP

Total expenditure on fossil fuels ranges from 3% to 8% of Chile's GDP

The three peaks are driven by external price shocks rather than increases in import values. Therefore, the fluctuations in import expenditure are largely beyond the country's control

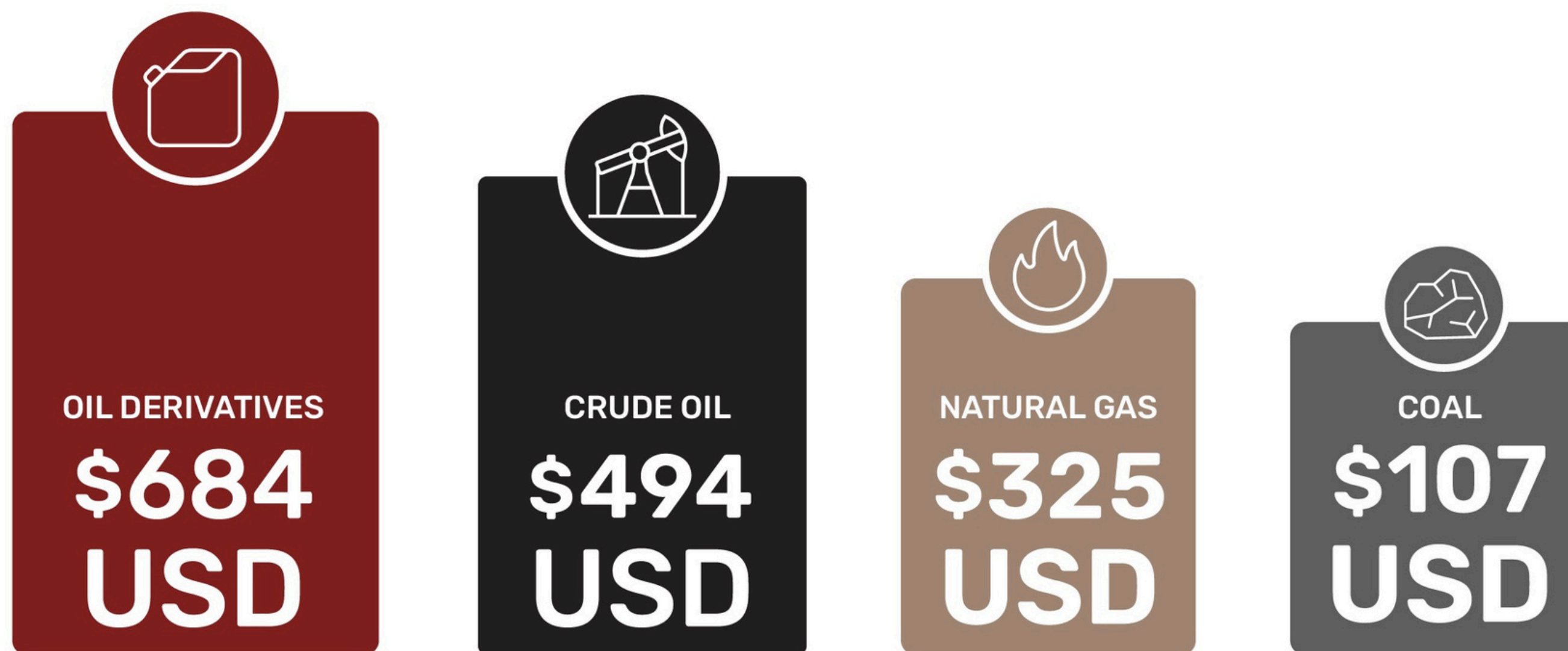
Total fossil fuel import expenditure as a percentage of Chile's GDP (2002–2024)



Price per tonne of fossil fuels imported by Chile

Chile imports oil derivatives processed in the US and pays the highest price per tonne

At US\$684 per tonne, oil derivatives are the most expensive fuel in the matrix. The main supplier is the United States, which concentrates both the cost and the geographic dependency.

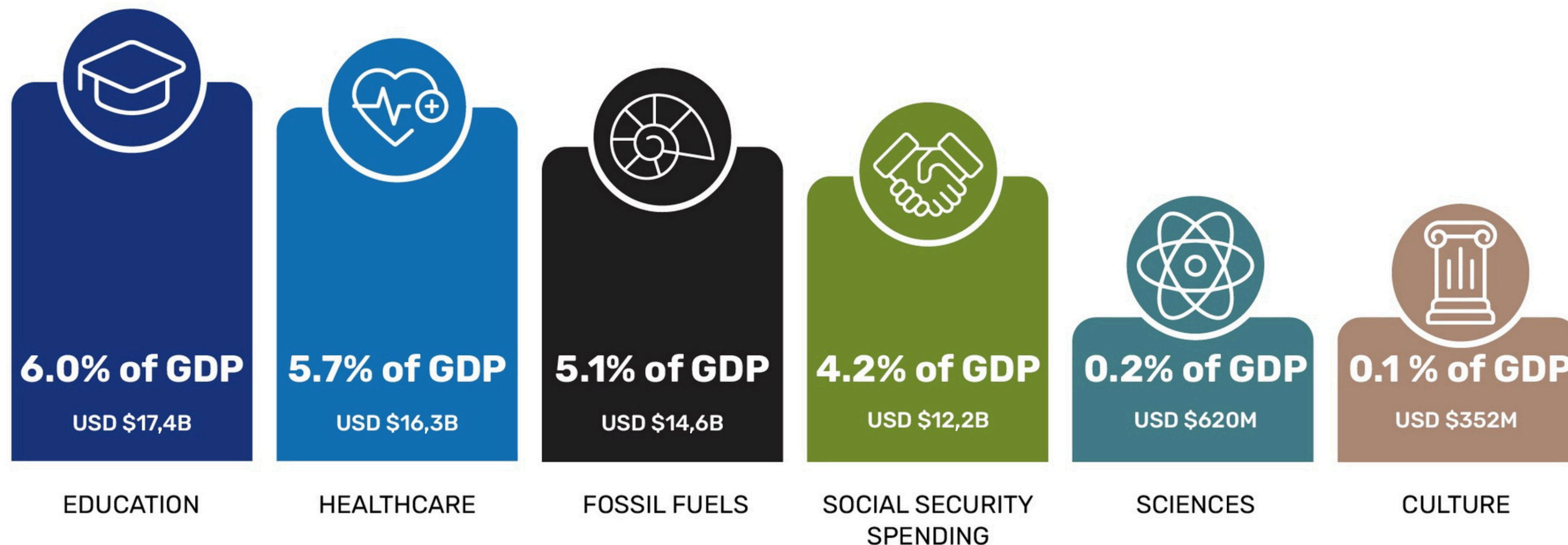


Note: Fossil fuels are not interchangeable. This comparison provides an estimate of their economic cost, but it should not be interpreted as suggesting that one fuel can be substituted for another. While substitution may be feasible in some sectors (e.g., electricity generation), it is not in others (e.g., transport).

Comparing fossil fuel expenditure with public spending

Chile spends almost as much on fossil fuel imports as on healthcare

Fossil fuel imports represented 5.1% of Chile's total GDP in 2024. This is comparable in scale to public healthcare spending (5.7% of GDP), although the two represent fundamentally different types of public expenditure.



Key points

The economics of fossil fuel dependence

Eleven supplier countries, two regions, one key driver: global prices.

US\$12,295 million spent in 2025

Eleven supplier countries across the Americas and the Asia-Pacific region.

The US accounts for 43% of total fossil fuel expenditure

US\$5,3B, primarily spent on oil derivatives

Argentina accounts for 24% of total fossil fuel expenditure

With nearly US\$3B, primarily from natural gas and crude oil

International prices, not import volumes, drive bill costs.

The spending peaks reflect external price shocks rather than higher import volumes. In 2022, fossil fuel import expenditure reached 7,2% of GDP, even though the country was not importing more quantity.

5.1% of GDP: comparable in scale to public healthcare spending (5.7%)

These are different types of expenditure. In peak years (2022), fossil fuel import expenditure exceeded every major social spending category in the public budget.

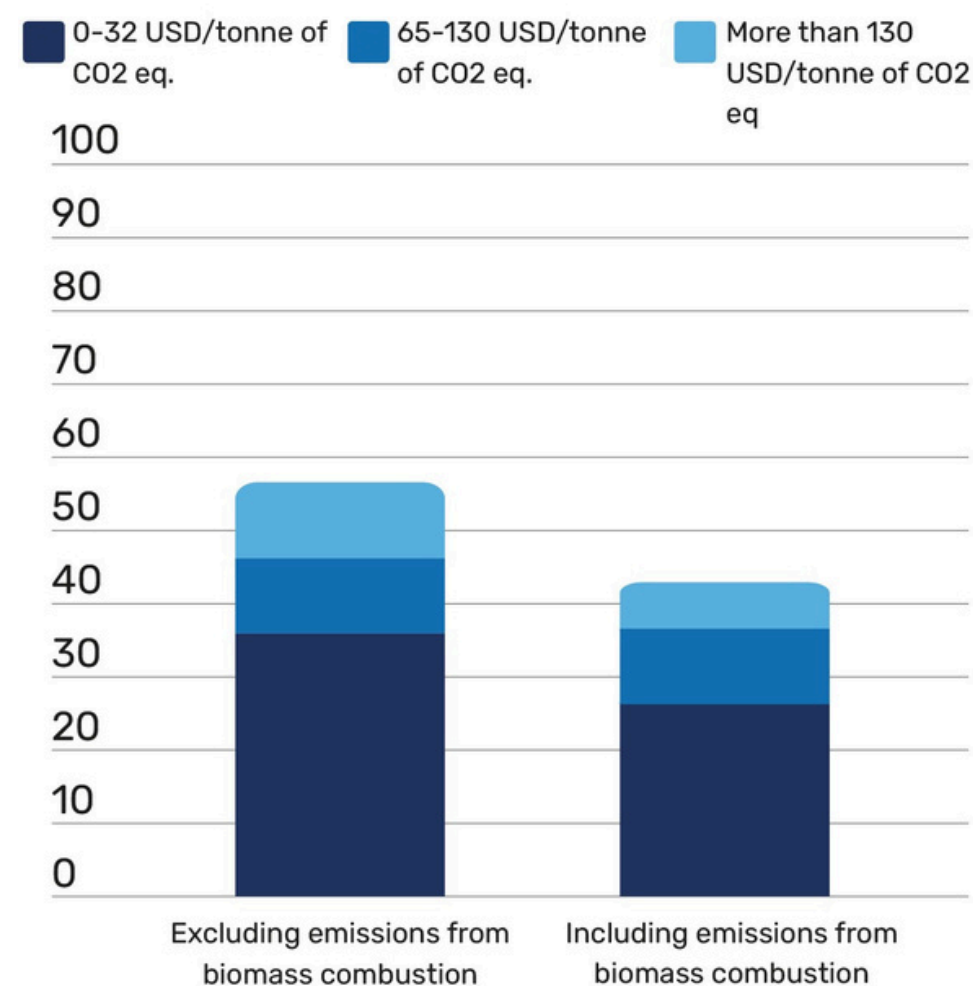
Carbon tax

Chile's carbon tax: scope and limitations

Implemented in 2017, with a rate of US\$5 per tonne of CO₂ applied to specific sectors, mainly in electricity generation (through boilers).

Net effective carbon rate by sector in Chile (2023)

Share of Emissions Priced Between USD 0 and USD 130 per Tonne of CO₂ Equivalent, 2023



According to OECD data, explicit carbon taxes covered 32.9% of emissions in 2023. Fuel taxes added an additional 23.3%.

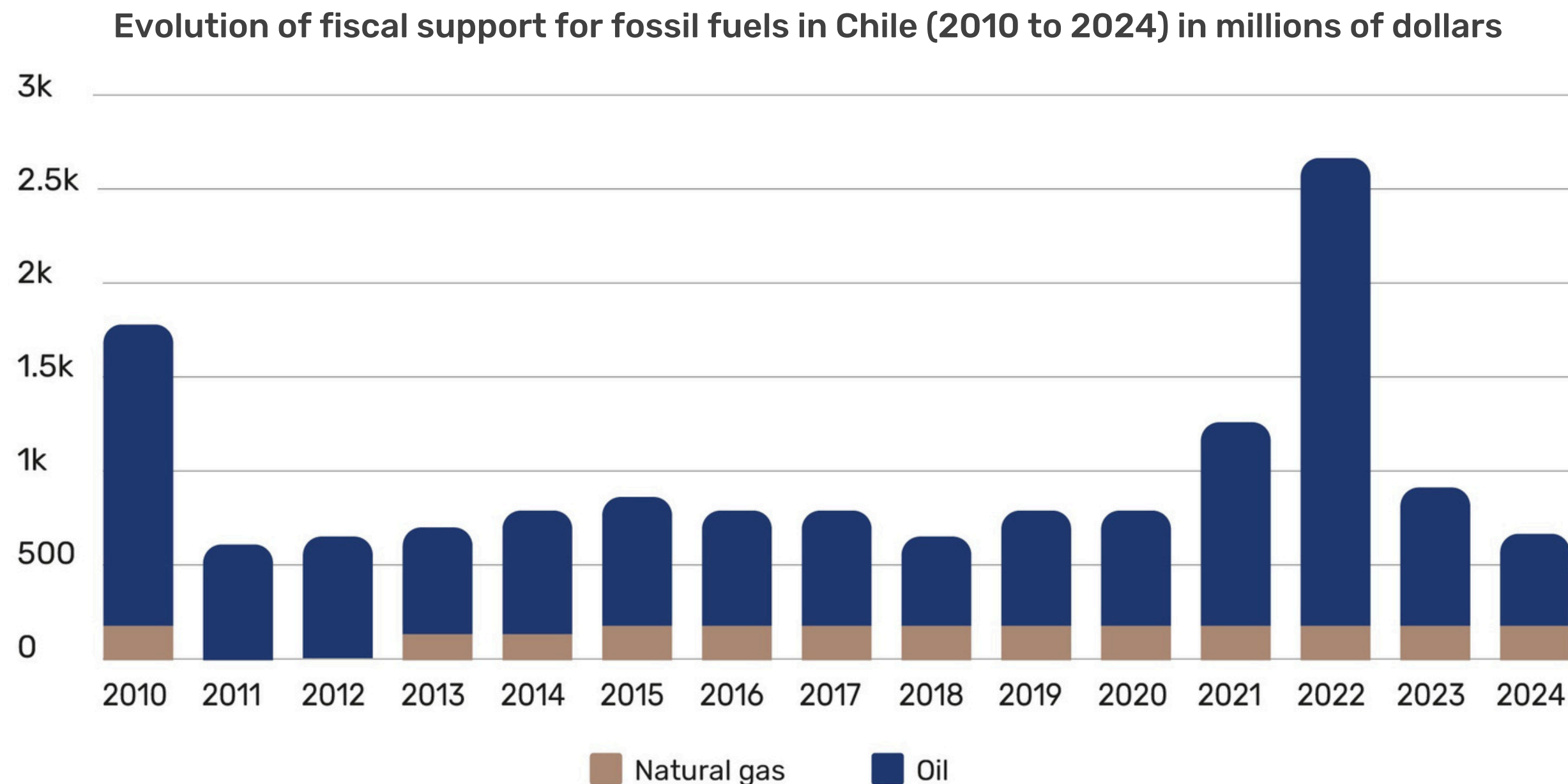
At US\$5 per tonne, the economic signal is insufficient to alter investment or consumption decisions.

Only 23% of emissions face a rate superior to 60 EUR per tonne, the mid-range threshold identified by the OECD.

Fossil fuel subsidies

Fiscal support for fossil fuels in Chile (2010–2024)

Chile maintains subsidy mechanisms aimed at cushioning the costs of fossil fuels for the end user. The main one is the Fuel Price Stabilization Mechanism (MEPCO).



Every year, Chile spends billions of dollars in importing fossil fuels that it is not producing, with the cost fluctuating due to decisions made outside of the country.

Simultaneously, the taxes that seek to disincentivize fossil fuel use are often way too low to change behavior of companies and people, and the main mechanism of the state to cushion the increase of fuel prices ends up subsidizing the consumption of the same fuels it seeks to reduce.

Thus, three forces end up pushing in different directions, with none of them pointing clearly to the exit.

The background image is a photograph of a protest in front of a large industrial facility, likely a power plant. In the foreground, a crowd of people is visible, holding various protest signs. One prominent sign on the left reads "AHORA GREEN PODEMOS" and another below it says "¿QUÉ PASA CON NUESTROS?". In the center, a sign partially visible says "¿QUÉ PASA CON NUESTROS?". To the right, a person is holding a flag with a green and white checkered pattern. The industrial facility in the background features several large cylindrical storage tanks and tall smokestacks. One smokestack is emitting a thick plume of white steam or smoke that rises into the sky. The entire image is overlaid with a semi-transparent green filter.

04

POLICY DIRECTION AND A COHERENT ENERGY TRANSITION

Public policies**Current scenario**

In Chile, there is currently no comprehensive instrument for a fossil fuel exit.

Carbon budgets and emissions in instruments

- NDC: Target of 95 MtCO₂eq by 2030, a budget of 1,100 MtCO₂eq for 2020–2030, and a limit of 90 MtCO₂eq by 2035.
- Energy sector plan: budget of 264.2 MtCO₂eq.

Missing fossil fuel targets

None of the current transversal frameworks establish targets for reducing fossil fuel consumption. This distinction does not undermine the country's climate structure and architecture, but it clearly defines its limits: it guides emission reductions but does not ensure a decrease in fossil fuel dependence.

Public policies**Coal****The clearest exit path****• Decarbonization plan / withdrawal and/or conversion**

Since 2019, it outlines a schedule for the closure or conversion of thermoelectric power plants, with a target completion horizon between 2035 and 2040. While it defines a concrete withdrawal trajectory, its voluntary nature does not establish legal obligations.

• Long-term climate strategy (ECLP)

It indicates that by 2025, 65% of coal-fired units were expected to be retired or converted. However, only 50% were retired due to the closure of 14 thermoelectric plants by that year.

• National Energy Policy 2050

Establishes the goal of withdrawing thermoelectric plants of coal by the 2030.

- Between 2025 and 2028, the majority of key milestones for implementing this trajectory are concentrated
- The current status of power plants show a heterogeneous trajectory. It combines effective closures, scheduled closures, conversions to both fossil and non-fossil alternatives, and a significant number of units without a clear closure definition.

Public policies

Coal

Table. Main policy goals associated with reducing coal consumption in Chile

Target year	Goal	Tool
2025	65% of coal-fired generating units retired or converted	ECLP
2030	Total retirement of coal-fired power plants	Energy policy 2050
2030	80% of electricity in the country must come from renewable sources	ECLP and Energy policy 2050
2035 a 2040	Total withdrawal or conversion of coal-fired power plants	Decarbonization Plan
2050	100% of electricity comes from zero-emission sources	ECLP and Energy Policy 2050

In summary**Coal**

Coherence and alignment exists, but there is still uncertainty regarding the plan for the withdrawal and/or conversion of coal-fired thermoelectric plants.

Policy-outcome alignment

Coal is the fuel where the greatest alignment is observed between the trajectory seen in practice and the official policy definitions.

Coherence does not equal reduced dependence

Reducing coal consumption does not necessarily lead to an equivalent decrease in overall fossil fuel dependence, as it has largely been substituted with natural gas.

Uncertainties in the Decarbonization Plan

Although as of March 2026, 14 of the 28 coal-fired power plants operating in Chile have ceased operations, the remaining plants are still operating, with some having no closure date and others undergoing evaluation for conversion to natural gas or storage. Deadlines for these units depend on case-by-case negotiations.

Public policies

Oil

The main energy source in the Chilean energy matrix

No comprehensive reduction plan

The Chilean government has not defined a reduction strategy to reduce and eliminate oil consumption. What exists is an assortment of tools directed at progressively electrifying the vehicle fleet.

Reducing oil consumption requires transforming the way people and products move.

The current commitments are spread in at least 7 tools, without a comprehensive document outlining in a unified manner how oil consumption will be properly reduced.



Public policies

Oil

Table. Main policy goals associated with reducing oil consumption in Chile

Target year	Goal	Instrumento
2030	Peak of emissions from the transport sector	NDC 3.0
2035	100% of new light- and medium-duty vehicle sales must be zero-emission	ECLP and National Electromobility strategy
2035	100% of new urban public transport vehicles must be zero-emission	ECLP and National Electromobility strategy
2040	100% of the urban bus and taxi fleet must be zero-emission	ECLP and National Energy Policy 2050
2045	100% of the new freight transport and intercity bus sales must be zero-emission	ECLP and National Electromobility strategy
2050	60% of private and commercial vehicle fleet must be zero-emission	ECLP and National Energy Policy 2050
2050	70% of fuels in non-electric applications must be zero-emission	ECLP

In summary**Oil**

Unpredictable impacts and the importance of the transport sector

Ambiguity in the definition of 'low emissions'

The targets refer to low-emission or zero-emission vehicles and fuels but do not specify whether this entails a complete fossil fuel phase-out or a partial substitution with alternatives such as hybrid technologies or renewable fuels.

Public transport

Urban public transport has achieved the most tangible progress. By 2025, Santiago had electrified more than 60% of its bus fleet. Extending this approach to other transport segments involves different conditions, multiple stakeholders, decentralized decision-making, and more uncertain investment horizons.

Measures focus on supply, not demand

The asymmetry between supply and demand may limit the pace of the transition, as transforming the vehicle fleet depends not just on the availability of alternatives but also on the conditions that make these alternatives economically viable for different user segments.

Impacts materialize over time

The concentration of the most ambitious targets are between 2040 and 2050, and paired with the intermediate commitments for 2030, it means that their impact on oil consumption will be gradual and delayed over time.

Public policies**Natural gas**

A fuel with no viable substitute

Moving in the opposite direction

Natural gas is the only major fossil fuel whose use has increased over the past decade, opposing the country's broader decarbonization trajectory outlined in Chile's energy policy.

An ambivalent role

There is currently no policy instrument that establishes a defined phase-out path for natural gas. Its role has been characterized inconsistently across policy documents and, in some cases, even within the same document.



Public policies**Natural gas**

Table. Position of Chile's main policy instruments on natural gas

Policy instrument	Position on natural gas
NDC 3.0	Does not mention it
ECLP	Low-emission transition fuel, subject to conditions on its use
Energy Mitigation Plan	Fossil fuel to be reduced, while also serving as a carrier for green hydrogen blending
National Energy Policy 2050	Fossil fuel and cleaner alternative for residential and industrial energy use
Decarbonization Plan	Necessary backup for the electricity grid during the coal phase-out
Cities Plan	Focuses on electrification and thermal efficiency in buildings, but does not reference natural gas explicitly

Public policy**Natural gas****Ambivalence and the energy transition****An invite to reflect on the energy transition**

The case of natural gas highlights a particular risk associated with energy transitions. When a fuel is designated as a transition fuel without a clear definition on when that transition ends, it tends to become entrenched. This occurs not through an explicit policy decision, but through the cumulative effects of infrastructure investments, long-term supply contracts, and sectoral applications that gradually create a dependency which later becomes costly to reverse.

Natural gas emits only around 25–30% less CO₂ than oil. A system that replaces coal with natural gas can only achieve a partial emissions reduction, but it won't eliminate its dependence on fossil fuels.

05

SUMMARY: DEPENDENCE, RISKS, AND OPPORTUNITIES

In summary

Dependency, risks, and opportunities

A structure based on fossil fuels

• Chile, a structurally dependent country

This is evident in three key findings:

- **Fossil fuel consumption has not declined** despite the expansion of renewable energy.
- **Dependence remains rooted** in imports concentrated among a small number of suppliers, exposing the country to unpredictable costs.
- **The climate policy framework focuses on** managing emissions but lacks an integrated strategy to reduce the role of fossil fuels in the energy system.

• The need for comprehensive interventions

- **Fossil fuels are embedded across Chile's energy system:** they power the transport sector, support part of the electricity system, and supply industrial processes for which no operational substitutes currently exist at scale.
- **This dependence is not confined to a single sector,** it is rather deeply rooted in infrastructure, contracts, consumption patterns, and investment accumulated over decades.

In summary

Indicators and assessment

Table. Indicators of fossil fuel dependence in Chile per fuel (2024)

Indicator	Coal	Oil	Natural gas	Total fossil fuels
Primary energy supply	33,274	178,240	61,388	272,902
Change, 2000-2024	+4% ⁹	+50%	+2% ¹⁰	+29%
Share of the primary energy matrix (2024)	8%	43%	15%	66%
Sector with the highest concentration	Electricity (97%)	Transportation (60%)	Electricity (51%)	—
Imports as a share of supply	~100%	~93%	~76%	Predominant in all three cases
Main suppliers	Colombia	United States, Brazil	Argentina, United States	11 countries, concentrated in 4
2025 import expenditure (USD million)	593	4,428 (Crude) 5,648 (Derivatives)	1,626	12,295

Source: own making

In summary

Indicators and assessment

Table. Assessment of the phase-out process by fuel

Dimension	Coal	Oil	Natural Gas	Integrated Assessment
Consumption Trajectory	Decreasing	Stable at high levels	Increasing	No aggregate reduction
Political Strategy for phase out	Defined	Partial and fragmented	Ambiguous	No integrative instrument
Trajectory-policy coherence	High	Low	None	Fragmented
Presence in NDC	Indirect (via carbon tax)	Indirect (via transport)	Not mentioned	Targets by emissions, not by fuel
Effective price signal	Decreasing due to falling consumption	Buffered	Weak	Insufficient to alter trends

In summary

Dependency, risks, and opportunities

Vulnerabilities

Geopolitical vulnerability

Chile's fossil fuel supply depends on a small number of suppliers whose stability is not guaranteed. Chile is now a country that entrusts its supply to decisions made beyond its borders.

Economic vulnerability

The three increase cycles recorded since 2002 were driven mainly by fluctuations in international prices, not by rises in domestic consumption. In each of those episodes, the Chilean economy absorbed an external shock over which it had no control.

Institutional vulnerability

The architecture of Chile's climate policy manages emissions, not fossil fuel dependence. As long as there is no instrument that integrates the trajectories of the three fuels and assesses their combined effect on dependency, the country risks meeting its emissions targets without reducing its exposure to vulnerabilities.

In summary

Dependency, risks, and opportunities

What Chile has going for it

Transforming our energy system

Chile has the conditions to do it. the real question is not whether the transition is possible, but whether the speed and depth of its implementation is proportionate to the scale of the dependence.

Policies already underway

The policies exist and are in operation. What is missing is their articulation regarding the reduction of fossil fuel dependence as a pillar of a more resilient development.

Points of convergence

The convergence between climate targets and sovereignty objectives represents a comparative advantage of the Chilean energy transition process, an advantage that public policies haven't focused on completely.

The background of the slide is a collage of four images. From left to right: 1. Wind turbines in a desert landscape. 2. A large solar panel array in a desert with mountains in the background. 3. A volcanic eruption with a large plume of smoke and ash. 4. A dam with water flowing over it.

06 CONCLUSIONS

Final takeaways

- **The energy policies in Chile are not reducing the dependence** on fossil fuels, they are modifying the internal structure of fossil fuel use.
- Chile is advancing the **decarbonization of its electricity system**, but not on fossil fuel phase out.
- There is currently no tool in Chile that assesses whether the sum of these strategies will lead to an effective reduction in the nation's fossil fuel dependence.
- Reducing fossil fuel dependence does not compete with the Chile's development goals, it strengthens them. Chile has the conditions to turn its vulnerabilities into advantages.

Chile could establish itself as an international leader by demonstrating that the expansion of renewable energy can effectively translate into reduced demand for fossil fuels.

Moving in this direction would strengthen the nation's energy security and pave the way for a more stable and sustainable development, a challenge that remains active.



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