



Comisión
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Executive Summary
Use of artificial intelligence for the
characterization of the environmental
regulatory burden of projects in development
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Regulation is a fundamental instrument of public policy. When well designed, it protects collective goods, corrects market failures, and provides certainty to investors. However, when it accumulates unrevised, it presents inconsistencies, or imposes unnecessary burdens, and therefore, can become a barrier to productivity and investment.

In this context, the National Commission for Evaluation and Productivity (CNEP) measured the environmental regulatory burden faced by strategic sectors of the Chilean economy.

The study focuses on the Environmental Qualification Resolutions (RCAs), which consolidate all obligations a project must comply with to be approved under the Environmental Impact Assessment System (SEIA). Manually analyzing this information is highly complex due to the length, heterogeneity, and lack of standardization of the documents. The recent availability of Generative Artificial Intelligence (Gen AI) tools allows us to overcome these limitations by transforming unstructured documents into auditable, comparable, and scalable databases.

Using this tool, 1,336 RCAs from mining and energy projects approved between 2015 and 2024 were processed. This represents 62% of the investment approved within SEIA during this period. Every obligation contained in these documents was extracted, classified, and characterized based on variables such as normative origin, protected environmental component, and the project stage to which it applies.

This allowed for a precise assessment of the magnitude and composition of the environmental regulatory burden:

- More than 220,000 enforceable obligations were identified, with a sustained upward trend in the average number of obligations per project over the past decade.
- 63% of the obligations have an explicit normative origin, while the remaining 37% correspond to RCA-specific conditions or voluntary commitments.
- Environmental Impact Studies contain, on average, more than twice as many obligations as Environmental Impact Declarations, consistent with the scale and complexity of the environmental impacts generated by the projects.
- Energy projects generally face a greater regulatory burden than mining projects, except in large initiatives where the difference narrows.

- “Obligations of means or diligence” predominate and detail specific procedures. While these may reduce flexibility, they facilitate enforcement. There is also an increase in secondary obligations, focused on reporting and verification.
- The most common Sectoral Environmental Permits (PAS) are for waste management, water use, and subdivision of rural land. Regarding contingencies and emergencies, projects prioritize operational and natural risks, such as handling hazardous substances, responding to fires, and managing geophysical events.

This study represents a systematic effort to quantify environmental regulatory burden in Chile. The results provide objective, traceable evidence of how the regulation affecting investment projects has evolved and demonstrate the potential of new technologies to support regulatory analysis.

Beyond the specific findings, the study offers a methodological framework that can be replicated in other sectors. This supports the transition toward a more transparent, evidence-based regulatory system that better balances environmental protection with economic development.

The use of Gen AI requires high-quality input and expert supervision. These models can standardize criteria but may also introduce biases or misinterpretations. As an exploratory exercise, this study prioritizes traceability and replicability.

To access a detailed and dynamic analysis of the results, you can visit the interactive dashboard at www.cnep.cl