

THE LEGISLATIVE LANDSCAPE OF BRAZIL'S ENERGY TRANSITION: A COMPREHENSIVE MAPPING OF MEASURES

Topic: Energy policy and regulation for renewable sources and clean technologies

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Overview

The study of a country's legislative production, encompassing the volume and nature of proposals within the realm of the Legislative Branch, holds significant academic potential. This emphasis highlights the necessity of examining the breadth of measures collectively to grasp the comprehensive strategy being deployed. Legislative proposals allow for the assessment of the State's response to challenges, crises, or societal demands. They serve as a mirror reflecting political priorities, legislators' interests, coalition dynamics, and the debates surrounding crucial social, economic, and environmental issues. Through this lens, we can observe the diverse approaches and priorities within the legislative framework, offering insights into the multifaceted nature of policy-making for energy transition.

Despite its notable potential, the academic pursuit of understanding these legislative proposals encounters notable hurdles. The sheer volume of data stands out as a primary challenge. Each legislative session witnesses the introduction of thousands of proposals in the National Congress, characterized by thematic overlaps and simultaneous proceedings. Moreover, the intricate legislative framework of Brazil, featuring two legislative bodies (the Chamber of Deputies and the Federal Senate) and an extensive array of specialized committees, adds layers of complexity to any analytical or research effort.

In our research project, we venture into the database of the National Congress to thoroughly examine all legislative efforts pertaining to the energy transition from 1988 up to December 2023. By conducting this in-depth analysis, we aim to shed light on the legislative trajectory in response to the challenges of energy transition delineating the shifts in political priorities and offering insightful perspectives on the forces molding energy policy in Brazil throughout the stipulated time frame.

Methods

Our methodology for mapping legislative proposals involves creating a comprehensive database that encapsulates a range of variables relevant to these proposals. This includes basic information, legislative progress, and content analysis. The data acquisition phase sources legislative proposals from the official databases of the National Congress through methods like APIs, web scraping, or specific format data extraction, all guided by predetermined keywords.

To process the text of these proposals, we employ Natural Language Processing (NLP) techniques to identify patterns, specifically focusing on whether a proposal introduces new legislation or amends existing norms, complemented by manual readings by our research team.

We then utilize machine learning for classifying these proposals into themes and subthemes, again supported by manual readings to ensure a thorough categorization. Following this, we undertake descriptive statistical analyses and create visualizations to aid in the comprehension and interpretation of the data.

In the qualitative phase of our methodology, we focus on data validation to ensure its consistency. This involves identifying inconsistencies, errors, and anomalies through manual data review, logical consistency analysis, and random sampling for a detailed examination. This dual-phase approach allows us to meticulously map out the landscape of legislative proposals related to energy transition, providing a clear view of their evolution over time.

Results

Our research is currently underway, focusing on a thorough quantitative and qualitative analysis of Brazil's legislative efforts towards energy transition. We anticipate our findings to culminate in a detailed paper, profiling the legislative proposals from 1988 to December 2023. This will encompass a variety of key areas, including renewable energy policies, solar and wind power generation, infrastructure and smart grids developments, energy storage and emerging technologies, supply chains for clean energy, research and development (R&D) initiatives, energy efficiency policies, and greenhouse gas emissions mitigation.

In particular, our study will explore legislative landscape around incentives and fiscal stimuli for the development and use of renewable energies, regulations supporting distributed solar and wind generation, grid modernization for renewable integration, energy storage incentives, cleaner energy transition strategies, supply chain policies, R&D investments, and legislative measures for enhancing energy efficiency and reducing emissions.

Conclusions

The conclusions of our article aim to deliver key insights into Brazil's legislative framework regarding energy transition, offering a comprehensive understanding of the policies, regulations, and initiatives driving the country's transition to clean and renewable energy sources. Through a detailed examination of legislative proposals spanning renewable energy policies, infrastructure upgrades, R&D funding, and emissions reduction, this research would contribute significantly to the academic community's understanding of Brazil's energy transition trajectory.