WHAT IS ENERGY SECURITY IN BRAZIL?

Gabriela Soares de Faria, University of São Saulo, +55 11 989532455, [gabriela.soares.faria@usp.br](mailto:gabriela.soares.faria@usp.br)

Thiago Luis Felipe Brito, University of São Paulo, [thiagobrito@usp.br](mailto:thiagobrito@usp.br)

# Overview

Reflections on energy security gained prominence in the literature during the 1973 oil crisis. Subsequently, in the 1980s and 1990s, with the increase in oil supply and falling prices, the topic lost relevance, resurging as a point of interest from the year 2000 onwards when an imbalance between the growth in consumption and global energy supply became apparent (FUSER, 2017). Since that moment, the theme of security has become increasingly prevalent in academic literature. However, its concept is still a subject of debate, as literature emphasizes not only the assurance of energy supply but also the importance of its relationship with economic, socio-economic, and environmental aspects.

The IEA, the International Energy Agency, for instance, defines energy security as the uninterrupted availability of energy sources at an affordable price. For the agency, energy security has many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. On the other hand, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance.

In Brazil, although there is a supply of primary energy considered diverse, as well as practically universal access to electrical energy by the population, several issues related to energy security deserve attention. Some of these issues involve the quality of electricity supply, dependence on water sources, volatility in consumer prices, challenges associated with diversifying the energy matrix in favor of renewable sources, and isolated regions still lacking access to electricity. Considering the above, this study aims to contextualize the evolution of the concept of energy security over time and investigate how this theme is addressed in Brazilian energy planning documents.

**Methods**

To achieve this purpose, the work is divided into three parts. The first involves a bibliometric analysis of energy security, a qualitative analysis allowing the visualization, clustering, and systematization of published articles on the topic. To this end, a bibliographic survey will be carried out in the Scopus repository, with publications between the years 1941 and 2023. The documents found will be interpreted by the VOS Viewer software.

The second part intends to carry out a literature review of studies explaining the concept of energy security, accompanied by a comparative analysis of its evolution over time. Finally, the last section focuses on investigating the definition of energy security in official Brazilian energy planning documents, including, mainly, publications from Brazilian government institutions responsible for formulating and evaluating public energy policies, such as “Ministério de Minas e Energia” (MME) and “Empresa de Pesquisa Energética” (EPE).

# Results

With this work, we aim to demonstrate how the concept of energy security has undergone significant transformations over time, moving away from being exclusively addressed from the supply perspective and evolving into a multidimensional vision. This implies considerations regarding the quality and scope of access, prices, ways to improve energy efficiency, and environmental factors, among others.

The expected results are: (i) to conduct a mapping of articles on the definition of energy security, aiming to demonstrate the differences between articles published in Brazil and those published in other countries; and (ii) to present how the concept of energy security is found in official government documents and in which types of documents it is or is not mentioned.

The preliminary analysis of recent documents, such as the 2031 Decennial Plan conducted by EPE in the year 2022, suggests that despite the term "energy security" being mentioned sometimes, there is no clear definition in the document of what energy security entails. Instead, the term seems more closely associated with issues related to energy supply.

**Conclusions**

The present study aims to demonstrate that the concept of security has a new configuration and possesses an interdisciplinary nature. Despite facing significant challenges, the study seeks to illustrate the importance of considering this broader concept in research, as well as in the formulation of public policies and energy planning for the coming years in the country. This is particularly crucial when regarding energy planning as an integrated management tool that analyzes various aspects, not just the security of energy supply.

Based on the results of this study, potential developments for future research could include understanding the level of Brazilian energy security considering this broader perspective. Additionally, there is the possibility of developing a methodology for calculating energy security.

# References

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