SEGURANÇA ENERGÉTICA: UM BALANÇO DA POSIÇÃO BRASILEIRA

ENERGY SECURITY: TAKING STOCK OF BRAZIL'S POSITION

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Resumo: Este artigo pretende abordar a necessidade da comunidade internacional acerca da reformulação das políticas energéticas após o choque do petróleo (anos 70) para permitir a diversificação de sua matriz energética e promover relações prósperas nesta área. Assim, abordará a política energética brasileira através do conceito de segurança energética que, apesar de muitas vezes ser confundido com a independência energética, possui um amplo escopo de análise que transborda para uma grande variedade de setores e dimensões além da própria energia.

Palavras-chave: Segurança Energética; Brasil; Política.

Abstract: This paper aims to address the necessity of the international community regarding the reformulation of energy policies after the oil shock (70's) to enable the diversification of its energy matrix and foster prosperous relations in this area. Thus, will approach the Brazilian energy policy through the concept of energy security that, although is often confused with energy independence, has a broader scope of analysis that overflows to a wide variety of sectors and dimensions beyond energy itself.

Keywords: Energy Security; Brazil; Policy.

Introduction

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On a daily-basis routine, we are prompted with information regarding fluctuation of oil prices, as well as on the prominence of global warming. More recently, notably, Russia stands out as a major regional player in energy supplies (specially for Europe), as well as the threat of "resource nationalism" for an energy in Latin America, and the new technologies that guarantee cheapness (such as solar and wind) and the exploitation of unconventional energies (such as shale gas), which highlights the effects of globalization and interdependence under the sector.

Concerns regarding energy security are rife in many current debates, influencing how different actors make decisions, from national security ones to international diplomacy. Condoleezza Rice, former US secretary of state, expressed her views on the extent of this influence, stating that "nothing has really taken me aback more than the secretary of state than the way the politics of energy is – I will use the word ' Warping' – diplomacy around the world" (MUFSON 2006: 1).

The delicate relationship between energy producers and supplier's nations has played an increasingly important role in international relations, particularly because of the relevance of oil in the most diverse energy production chains. The guarantee of the demand and the stability of the offer constitutes high standards for national security guidelines, giving a sense of urgency to the topic. According to Friedman (2006: 1), "thinking about how to alter our energy consumption patterns to bring down the price of oil is no longer simply a hobby for high-minded environmentalists or some personal virtue. It is now a national security imperative".

Given this scenario, this paper reflects on the different interpretations of the concept of energy security, highlighting the importance of a multifaceted view on it. In order to make this analysis possible, we will go back to the classical literature on Security studies in order to find the basis for the analysis of the broader security concept (BUZAN e HANSEN, 2010; KRAUSE e WILLIAMS, 1996). Regarding the concept of energy security itself, it is important to note the differentiation of the understanding between guarantee of generation and supply of energy in addition to the multifaceted view of the concept, which addresses the need to think about the spillover that the search for energy security generates in the other sectors.

This paper will also assess the need faced by various regions of the globe to reformulate their energy policies right after the oil shock of 1970 in order to diversify not only their energy matrixes but also to foster relations in this context in the regional context, which is constituted as we commonly known as high politics, the relevance of other themes such as energy security. It is intended to evaluate the different ways in which energy security has been approached over the last five decades.

We also aim to highlight the importance of global governance in promoting initiatives to transform the energy sector, as well as highlighting the role of states in adopting new methods of energy policy management and diversification of resource matrices. Finally, it is intended to make a historical and current analysis of Brazilian energy policy from the 1970s, in order to identify the following points: (i) shifts from an energy security perspective focused on guaranteeing demand for an expanded view which considers other dimensions - environment, society and politics; (ii) individual positioning (i.e. nationalist, focusing on the domestic sector); (iii) Brazil's regional and international position in the energy sector.

The methodology consists of a qualitative analysis based on a review of the literature on topics related to the energy sector in the national, regional and global context. Given the extreme need to deepen the discussions on energy security in Brazil, which has not been explored in the academy *in loco*, being foreign most of the bibliography found and used, concomitant to the fact that the international community is in times of adaptation to treaties and conferences promoted by global energy and climate governance organizations, this article assumes a exploratory and analytical character in order to achieve the theoretical understanding in the academy of energy security studies.

1. The broader concept of Security

Considering the World War I and the desire to avoid new conflicts of such nature, the discipline of International Relations was born in 1919 in Aberystwyth, United Kingdom (reference). Security, in this sense, is configured as a matter of high politics (COLLINS, 2007).

As an effort to define the security concept, many authors have addressed the matter through a realistic bias of international relations, but *a priori* we can understand that security is everything that threatens survival – whether there are States or the human beings to be

considered. According to Bellamy (1981), security itself is a relative freedom of war. Freedom by pursuing a long period of peace and mitigation of conflicts and relative because they are inevitable.

On the other hand, security can also be defined in relation to vulnerabilities - internal or external - that threaten or have the potential to overturn or weaken State structures, both territorial and institutional, as well as governmental regimes (AYOOB,1995). Therefore, it is possible to visualize important shifts according to the temporality of the concept of security meaning. The traditional definition of it presupposes that the State is only acting in a sovereign way with the purpose of guaranteeing the authority over its territory, and for this it is essential to use military mechanisms (OLIVEIRA, 2009).

Carr (1981), for instance, builds his theory based on the centrality of power in international politics, defining power in three categories: (i) Military power: the highest expression of power; (ii) economic power (low politics): submitted to military power; and (iii) power over opinion: the art of persuasion as the essence of politics. These categories, in fact, are not totally independent. They integrate the parts of an indivisible power. Military power constitutes the well-known sphere of high politics, while economic power is considered low politics. We can consider that the concept of security is restricted to the survival of the State.

However, after the end of the Cold War, security comes to take a broader view. The State and its military power are still important, but the emergence of new factors includes several vulnerabilities intrinsic to the issue of security, among them the economy, climate change, poverty, energy, among others. Based on this bias, the classic view of assimilating security studies focused on a militaristic view begins to lose momentum, since new studies tend to connect different perspectives of thought (VILLA, 1999).

It is worth highlighting that new agendas start to be considered as security issues, giving space for their securitization. For Buzan et al. (1998) and Wæver (1995, 1998), authors of the Copenhagen School, the securitization of a given topic would be successful if it basically presented the following three steps: (i) identification of threats; (ii) emergency action proposal, and (iii) breaking free of regular rules of security. Therefore, “it is by labeling something [as] a security issue that it becomes one” (WÆVER, 2004: 13), with securitization being “a social and intersubjective construction” (TAURECK, 2006: 3).

2. The concept of Energy Security

It is important to emphasize that before proposing any discussion on the term energy security, a distinction must be made between energy independence and what the concept actually means. Its classical view involves aspects of energy independence as it seeks stable domestic production and supply, as well as stabilization of energy flows. In the analysis of the classic perspective of energy security, it is notable the presence of two main actors involved in energy dynamics: producer states and supplier states. It is also noted that the classic perception of energy security interprets the term only from the guarantee of the supply and generation of energy, without taking into account the eventual spillovers that this process can generate for the overall policy of the States, besides considering only energy.

In the 1970s and 1980s, energy security was represented by the stable supply of cheap oil, with a focus on mitigating threats of embargoes and price manipulations by exporting countries (CHERP, JEWELL, 2014; YERGIN, 1988). Thus, the concept was very close to national values such as political and economic independence, territorial integrity and oil hegemony in the energy sector. By our own definition, we classify this view of the concept as classic. On the other hand, contemporary studies on energy security incorporate a number of other factors, taking into account not only the mitigation of threats arising from the classical perspective, but also climate change, greater equity in the distribution of energy resources and greater socio-political stability to ensure flows between the chain of producers, suppliers, final consumers and the society of these countries that depend on revenue from energy flows (CHERP et al., 2014; GOLDTHAU, 2011; YERGIN; 2006).

Defining energy security in the face of a broader scope, Silva (2007) points to the need to define a new concept of energy security for the 21st century. According to the author, the range of threats has diversified with terrorism, internal destabilization in producing countries, erosion of surplus production capacity, influence of demographic factor and climate threat.

The current concept of energy security was born after the first oil shock in 1973 and is essentially directed at preventing supply disruptions in producing countries. This concept is not enough to respond to current problems that are multi-dimensional and multifaceted (SILVA, 2007: 37).

On his turn, Collins (2007) examines emerging concerns about global energy security in line with accelerated demand for fossil fuels by industrialized economies, which increases uncertainties about the planet's future energy reserves. The author takes as a key point the petroleum policy as the main source of global energy, as well as assessing the ways in which energy insecurity will increase among the world's great powers and how this will impact international security. He also discusses the different understandings about the likelihood of future resource wars and a geopolitical rivalry.

The author defines energy security as a fashionable term, which involves: (i) an intersection of a series of emerging trends arising from global demand for energy; (ii) the fear of shrinking sources of supply; (iii) increasing instability in regions where energy resources are plentiful; and (iv) concerns about the future devastation caused by climate change and how this affects the guarantee of local sources and stability of the world's energy supply.

On the other hand, when we take Dirmoser's (2007) analysis into account, the definition of the term comes as minimizing the risk of energy crises by political means. It is understood that most states have something in common: they are not able to cover their energy demand with their own resources. Most of the world's 193 countries are increasingly dependent on a small number of exporting countries, which have an overabundance of energy commodities. The author names this group as the world’s energy ellipse.

He also points out several factors for the extension of the concept of energy security. Among them, the necessity to create conditions for the change of the current energy model favoring the greater contribution of renewable energies, hydro, wind, solar, biomass, nuclear energy, biofuels and hydrogen, in order to make compatible both development and the protection of the environment, catalyzing the reduction of greenhouse gas emissions (DIRMOSER, 2007).

In the structure of the energy sector, composed of sources, resources, infrastructure, equipment and technological means, Espona (2013) points out that there are many contextual factors that demonstrate the multifaceted nature of energy security, as well as generate influences on it. He states that limiting to the analysis only on supply - which is, of course, essential - is not conceptually sufficient for a complete consideration of Energy Security, with more factors affecting it. In this sense, it can be understood that energy security has not been treated in a concrete and systematized way, considering all functional aspects converging on

the concept. So far, a classic view of the term has been used, based on energy infrastructure and the geopolitics of energy supply.

Emphasizing the term energy security and its multifaceted characteristic, the author postulates that the term should be treated based on the security of independence and resilience, reducing the vulnerabilities and sensitivities of the energy sector, combining the fields of security, defense, economy and international relations, as well as contemplating various action plans on tangible aspects of the energy sector, from the classic securitization of energy-producing infrastructures to protecting corporate image and energy knowledge management (ESPONA, 2013).

Kruyt et al. (2009) demonstrate that there are four main elements in the understanding of energy security, which are: (i) energy availability; (ii) accessibility; (iii) costs; and (iv) environmental sustainability. Following this line of interpretation of the concept, Von Hippel et al. (2011) highlight four more variables that also need to be incorporated into the concept. These are: (i) environment; (ii) technology; (iii) demand side management; and (iv) sociocultural factors. For Koyama and Kutani (2012), the concept means securing the amount of energy required for people's life, economic, and social activities, defense and other purposes for acceptable prices.

It is notable that the years of 1970s had their importance on defining new ways of approaching energy. It was a period that we can classify as the trigger for the emergence of new definitions of the concept of energy security, in addition to and not detriment to the classical view, besides the encouragement for reformulation of the national energy policies of many countries and stress the role of international multilateral organizations dealing with the issue.

The International Energy Agency (IEA), which was created in 1974, reevaluated its conceptions over these decades. In 1985, it defined energy security as "an adequate supply of energy at a reasonable cost" (IEA, 1985: 29); As in 2007, it states that "energy security always consists of both a physical component and a price component, but the relative importance of these depends on market structure" (IEA, 2007: 32). In 2010, however, it proposed a more in-depth definition, highlighting the need to think about environmental concerns (CHERP, JEWELL, 2014).

In the year 2017, the following definition is found in the IEA website:

> […] the IEA defines energy security as the uninterrupted availability of energy sources at an affordable price. 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 promptly react to sudden changes in the supply-demand balance.

It is therefore noticeable that the broader vision of the concept of energy security rests solely on long-term analyzes, while the short-term ones focus on the need to narrow the focus only between supply and demand. It is also perceived that in fact there is an intrinsic need to treat energy security not only from the supply and generation of energy, but mainly in a multifaceted way, taking into account other aspects involved in the dynamics of production and supply.

In this sense, there is no consensus among the authors about what energy security actually represents. The concept varies according to time and context in which it is applied and its definition cannot be limited to shallow conceptualizations based only on the states' or whatever actor's energy needs. It is noticed that, in the dynamics that the energy sector is embedded, limiting an analysis of the concept only to the independence of production and supply proves to be a mistake.

3. Regional and Global Interdependence in Energy and its implications

What has become clear in recent years, as importing and exporting countries have become more aware of the need to revise their energy policies according to the reality of the world, is that the global energy approach is of a much more present interdependence than independence. According to Yergin (2006), all countries must face the unfavorable fact that their goals for achieving independence are increasingly at odds with reality. All countries are trapped in a very complex global energy market exposed to vulnerabilities of various natures. True security is thus configured in the need to guarantee the stability of this market for all players involved.

The key to understanding the concept of interdependence in the energy sector is realizing that producers seek demand security as much as consumers pursue supply. If, for example, it is true that the European Union imports 30% of its energy from Russia, it is also true that Russia depends on the European Union for 20% of its natural gas revenues (SOLANA, 2006).

Anxiety on both sides can raise reactive tensions and defensive behaviors that not only detract from the relationship between individual trading partners but also overflow on broader issues of domestic, external, regional and international policy itself (SANTOS, VARELA, 2016).

Regional and global markets are the mechanisms by which competing and complementary interests of importers and exporters are reconciled (STANISLAW, 2004). In other words, the question is not whether energy and politics are connected, but how. In this sense, a balance between a market-oriented approach to energy security and a more strategic approach is necessary, involving the inclusion of the foreign and international policy of the states (SOLANA, 2006).

In this context, one must recognize the role that energy efficiency plays in the negotiations as a bargaining chip for importers, constituting itself as an instrument of power and bargaining. If, for example, the EU does not have the means to reduce the use of Russian oil, Russia has a great deal of bargaining and negotiating power, which requires the EU to have a foreign policy that considers this vulnerability (SANTOS, VARELA, 2016).

The most significant point emerging from this new perspective is energy security based on political bias, which considers the interactions and vulnerabilities of different actors, be they producers, consumers, exporters, importers and/or states. Addressing the issue under the logic of global interdependence in energy is being aware that the energy security of each state is an integral part of the security of any other nation.

A brief analysis of the posture of some global energy players shows the dissonance in establishing a definition for the concept of energy security. For the United States, energy security means "producing energy at home and relying less on foreigners; for China, this may mean buying foreign oil field stakes"; For Russia, "restrictions on foreign investment in domestic oil and natural gas are involved, while for Japan the focus is on" compensating for its scarcity of domestic resources through diversification, trade and investment (MALLABY, 2006; MCNULTY, 2006). It is appropriate for each country to prioritize its own energy needs, but all must be reconciled in order to achieve true global energy security.

According to Solana (2006), most producers and all consumers have a shared interest in maintaining a stable, transparent framework in which the pricing mechanism can function as

freely as possible. This means no unilateral measures and no 'politicization' of energy exports to punish foes or reward friends.

4. Nationalism of resources and its implications for energy security

Contrary to interdependence and greater cooperation among actors in the world of energy, some states emphasize policies understood as resource nationalism and/or supply disruption – such as gas in GASBOL (between Brazil and Bolivia) and more recently in Europe (Russian gas). It is worth mentioning that this type of behavior of hindering or refusing to sell energy to importing countries is often referred to as "energy weapon" (LÖSCHEL, MOSLENER, RÜBBELKE, 2010).

In this context, Dirmoser (2007) highlights the growing importance of "strategic ellipse" regions, ranging from the Persian Gulf to Western Siberia, regarding the world's energy supply, while the production of the countries that make up the Organization for The Economic Cooperation and Development (OECD) is declining. The author predicts that by 2020 half of the production will come from countries considered to be high risk and, like Collins (2007), argues that energy security will depend on the fact that international tensions, crises and conflicts do not affect the flow of resources natural.

Considering this scenario, most of the world's oil reserves are concentrated in government-controlled state-owned enterprises. Venezuela, for example, secured considerable influence in Latin America by subsidizing several countries with cheap oil that allowed an alliance against Bolivarian left populism. It is worth mentioning, for example, that the country has the largest oil reserves in the world - having surpassed Saudi Arabia itself (DIRMOSER, 2007).

Such strategy, as Dirmoser (2007) says, is oriented toward what he calls "resource nationalism," through the use of bilateral diplomacy for energy supply, or through bargaining tools and pressure. It also points out that the energy security strategy has as an alternative a basis for multilateral mechanisms in order to configure the international energy system in a way that generates greater equity for both producers and consumers.

Therefore it is notable the importance of having on the political agenda local action, but a global thinking, since an effective foreign policy can no longer be antagonistic to national interests. As it is well known, national interest encompasses a variety of feedback

mechanisms and overflows for the well-being of the whole of society and of a state itself. This proposal reflects the reality of the current world in terms of energy production and supply flows.

The most important energy resources (oil, coal and natural gas) are traded in a free trade logic at the international level. In most cases, they are international commodities whose prices are heavily defined by the financial markets. However, freedom in trade does not mean that these markets are perfect, given the distortions caused by cartels, oligopolies and oligopsons, representing the main market structures of the sector.

5. The pursue of alternative energy resources and the role of global governance

The quest for energy independence, energy security, economic growth and environmental sustainability increasingly suggests the importance of renewable energy sources. Renewable energy is obtained through the use of existing energy flows and natural processes, that is, in ways that generate greater availability of reusable energy than traditional resources used in production processes.

However, it is important to note that renewable energy sources are not exactly the same as alternative energy sources. Alternative energy is a broader category encompassing all sources and energy processes not based on fossil fuels, of which renewable energy is only a part. Alternative energy forms not covered by the renewable label include the power of hydrogen and the breaking power with traditional standards. Since current levels of hydrogen generation and fission energy are extremely low, renewable energies are now of greater interest for global energy dynamics.

Technology has been a prerequisite for exploring and giving commercial viability to alternative and renewable energy resources, so research and development (R&D) investments – particularly boosted by post-oil crises of the 1970s. Of renewable energy consumed by the world increased almost 1000%, having started from a very low base. By 2015, renewable energy accounted for 10% of the world's final energy consumption, with biomass and hydropower at the top of the list, with about 19% of global electricity needs being met by

renewable sources. Renewable energy consumption ranked third, behind coal (40%) and natural gas (around 20%) (REN 21, 2015).

The role of developing countries in the production and consumption of renewable energy is highlighted, particularly given the growing demand for energy in these regions. This is due to the massive investment levels of China and India, but also partly to the intensive use of biofuels, such as wood, by the poorest countries. Approximately 118 countries, of which at least half are developing countries, have renewable energy targets in place, while 109 countries have policies for the use of renewable energy in the energy sector (HARVEY, 2011).

Among the countries that have the largest capacity for renewable fuel supply (excluding large hydroelectric plants) we found China, the United States, Canada, Brazil and Japan (REN 21, 2015). China holds the world's largest renewable energy capacity, of which 25% is not hydroelectric power (REN 21, 2015).

Among the regions of the globe, the group of countries that has grown the most in terms of renewable energy use have been those in Europe, where governments have actively supported the expansion of the renewable energy industries. In 2011, renewable energy accounted for more than 30% of Europe's electricity capacity, an increase of 70% from 2010. Germany leads the European lead in this regard, with much of the energy matrix using renewable energy to provide about 12% of its final energy consumption and 20% of its electricity consumption (REN 21, 2012), while in 2011, renewable energy accounted for 11.8% of US primary energy production. The share of US grid-based renewable energy generation grew 3.7% in 2009 to 5.76% in 2012 and nine states generated more than 10 percent of their electricity from renewable resources (REN 21, 2012).

To encourage greater investment in sustainable energy, former UN Secretary-General Ban Ki-moon announced the Sustainable Energy for All initiative to achieve the following goals by 2030: (i) universal access to modern energy services; (ii) improved energy efficiency rates; and (iii) increased use of renewable energy sources (GLOBAL STATUS REPORT, 2015). It is also worth mentioning the greater weight given to the energy issue in the Sustainable Development Objectives (ODS), with ODS 7 being the goal of accessible and clean energy.

Regarding the theme of renewable energies as a way of expanding and diversifying sources and resources, the intrinsic role of government policy in supporting the development of this sector stands out. It is universally agreed that policy choices could substantially increase the market share of renewable energy (WEEKS, 2006). Most renewable energy industries, however, are still young and face low consumer demand (given prices) as well as strong competition from other traditional industries (coal and oil). Thus, the production of clean energy implies high costs of installation and operation (WIRTH et al., 2003); therefore, it is up to the direct State (subsidies and/or direct investments) or indirectly (institutional and regulatory rearrangements, public-private partnerships PPP) and/or market incentives) to promote such a sector.

6. Taking Brazil's case into account

Brazil is the largest country in South America in territorial dimensions, but it is not the largest energy producer, ranking second, due to the high production of non-renewable energy from Venezuela. However, in terms of renewable energy, with a focus on hydroelectric and wind production, Brazil is the largest producer (including the Union of South American Nations - UNASUR) and the third largest producer of hydroelectric power in the world. Thus, the main objective of recent Brazilian energy security is focused on the maintenance and exploitation of resources present in the national territory, such as renewable sources and the large pre-salt reserve, discovered in 2007.

Something about 42.5% of the energy consumed in Brazil is renewable (MME, 2014), that is, from resources capable of being reworked on the human time scale. The value is highlighted when compared to the world energy matrix, which in 2015 consisted of 82% of fossil fuels (non-renewable sources). Thus, the emission of carbon dioxide (CO2) in energy production in Brazil is considerably lower than the world average, being 1.59tCO2/tep versus 2.37 tCO2/tep (MME, 2015), respectively.

According to Law No. 9.478/1997, the principles and objectives of Brazil in relation to its energy policy have an emphasis on: preserving national interests; promoting development, expanding the labor market and enhancing energy resources; protect the environment and promote energy conservation. The original wording of this law was also to deal with regional integration, but all the paragraphs dealing with it were revoked.

As a fundamental goal to achieve these objectives, the Ministry of Mines and Energy (MME) has emphasized the production of biofuels from renewable sources and, for its application, has enacted laws requiring its commercialization. The most recent of these, Law 13333/14, provides for the mandatory addition of biodiesel to diesel oil marketed with the final consumer of 10% by the end of 2019.

One of the most important documents for Brazil, called the National Energy Efficiency Plan (PNEf), created by MME, assesses the country's energy composition, its self-sufficiency in several sectors and the implementation of the National Energy Plan 2030 (PNE 2030). This is only Brazil's most recent energy development program, since Brazil has had programs for at least two decades, such as the Electric Energy Conservation Program (PROCEL) and the National Rationalization Program for the Use of Oil and Gas Derivatives Natural (CONPET).

With the oil crises, between the 1970s and 1980s, Brazil began to worry about diversifying its energetic matrix, to guarantee self-sufficiency, and then to take advantage of its natural resources. During this period, the Itaipu Binacional hydroelectric plant was created, a partnership between Brazil and Paraguay, highlighting the national concern with the diversity of sources and the need for integration with its neighboring countries. With this movement, a broader and more political understanding of the concept of energy security was perceived, this time not necessarily limited to the national logic.

In addition to the short-term strategies, Brazil has created the long-term strategic document, PNE 2030. In this document, the entire demographic projection that Brazil will have until 2030 is calculated, together with an analysis of the sources Potential to be explored, along with a projection of costs and gains. After the discovery of the large oil reserve located in the pre-salt layer in the coastal region of southeastern Brazil, Almeida (2010) qualifies the reserve as contributing to the guarantee of national energy security, as well as a way to obtain a balance of the energy supply. It is worth noting that the country is not yet totally independent in relation to the internal energy supply, having imported 12.7% of the energy consumed in 2014 (MME, 2015).

Regarding the military dimension of Brazilian energy security, this "includes actions in the field of the exercise of sovereignty over its reserves and energy infrastructure, whose primary objective is its vigilance, control and defense" (PAIVA, 2012: 9). Areas and in the maritime

region, called the Blue Amazon. However, energy security is seen not only in the military sphere, but also in an economic and environmental sense.

We can consider that Brazil aims at integrating with its neighboring countries in order to form a cooperative energy network, as the country already does, in bilateral relations with Paraguay, through the binational hydroelectric plant of Itaipu, and with Bolivia through import of gas by the Brazil-Bolivia Gas Pipeline (GASBOL), built in the late 1970s. The gas pipeline has a total length of 3,150 km, serving gas supply throughout the southeastern Brazilian region.

Law 12.351 /2010, on the regime that would be adopted for exploration of the pre-salt in 2010, stipulated that the activities should be done in a sharing regime, always with the presence of Petrobras, Brazilian state oil company. Of the total production, at least 30% would belong to Brazil. However, in 2016, the Senate, Congress and the Presidency of the Federative Republic of Brazil approved a bill that establishes a regime of concession to the private sector regarding the exploration of the layer. With the change, the company will be able to choose whether or not to participate in the extraction in fields laterally auctioned by the National Petroleum Agency (ANP). This new scenario leads us to reflect on the following questions: (i) how to guarantee energy self-sufficiency planning with international actors involved in the process? (ii) the diversification of actors cannot lead to an increase in energy insecurity? and (iii) is the hegemony/sovereignty of Brazilian natural resources not threatened?

Regarding Brazil's global and multilateral action on issues arising directly or indirectly from energy, a new United Nations Framework Convention on Climate Change (UNFCCC) was adopted at the 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris. In line with the central objective of strengthening the global response to the threat of climate change and strengthening the capacity of countries to deal with the impacts of climate change. In this sense, Brazil's Nationally Determined Contribution (NDC) has committed to reducing greenhouse gas emissions by 37% below 2005 levels by 2025, with a subsequent indicative contribution of reducing greenhouse gas emissions in 43% below 2005 levels by 2030. To this end, the country commits itself to increasing the share of sustainable bioenergy in its energy matrix to

approximately 18% by 2030, as well as achieving an estimated 45% share of renewable energy in the composition of the energy matrix in 2030.

7. Conclusion

The securitization of the energy issue highlights the relevance and urgency of this agenda in the political agenda of the different states, especially from the middle of the eighteenth century, when the first Industrial Revolution. More recently, however, and especially since the second half of the twentieth century, concern about the scarcity of natural resources, the social, environmental and political-institutional dimensions of energy, has been leading the discussion in the media and international forums, as well as Becoming common sense in the concern of civil society. Paradoxically, the enormous global dependence of fossil fuels on the world energy matrix generates a spillover effect on several sectors, which has required reforms not only in energy markets, but also in consumption, energy efficiency and energy supply.

More recently, particularly at the turn of the century, it has become increasingly evident that current international governance of energy regimes is limited in dealing with the complexity of issues and actors. In fact, the promotion of alternative energies in the energy matrix, distributed generation on a national scale, and the viability of non-conventional resources (such as shale gas), for example, have presented an unprecedented challenge to countries' energy planning. In addition, the challenge of promoting a defense of energy security at the regional level, which incorporates a series of regulatory and uncertain political and legal risks for the different states.

As noted by the literature review, there is no consensus on what energy security actually represents. The concept varies according to the time and context in which it is applied. What can be inferred from the analysis, however, is that the definition of the term cannot be limited to shallow conceptions based only on the energy needs of the States, nor to the traditional interpretations that go back to the challenges of the 1970s, when the oil.

In the case of Brazil, since the 1970s, an effort has been made to strengthen the oil industry in Brazil and make it less vulnerable. Brazil has taken an effort to increase the share of clean and

renewable energy, with the construction of hydroelectric plants, the launch of the Proálcool plan, and other energy diversification initiatives. Note in some cases, regional projects that deserve prominence, such as Itaipu Binacional.

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