

Aspects of public consultation for new energy projects in Brazil

Gisela Mello^{a1}, Marta Ferreira Dias^b, Margarita Robaina^c

(a) (b) (c) Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Department of Economics, Management, Industrial Engineering and Tourism (DEGEIT), University of Aveiro, Campus Universitário de Santiago, 3810-193 Aveiro, Portugal, gisela.mello@ua.pt

Abstract

The public consultation is part of the implementation flow for new infrastructure energy projects in Brazil, which only occurs during the environmental licensing phase. In an anticipated scenario of over 85.000 km of new transmission lines by the year 2024, public consultations become a necessary phase in a way to create a communication channel between those directly or indirectly affected, entrepreneurs and decision makers. Besides to inform, debate and provide feedback about a new project, they it is an opportunity to bring to the discussion present topics such as: climate change and decommissioning phase.

Based on consultation sheets from 10 public consultations for new transmission systems, carried out by IBAMA in different regions of Brazil, between the years 2010 to 2020, it is evidenced that factors such as: spatial dimensions and geography of Brazil, different biomes, cultural and economic aspects influence the questions performed during the consultations. Moreover, these prospects affect the implementation phase of the new projects.

Aspects such as low participation of the population, lack of participation of other government sectors, lack of knowledge of the flow of the project conception and implementation process, misunderstanding of the rite of environmental licensing and social and environmental impacts, prioritization of private interests, political motivations were found in the public consultations queries analysed. And, topics like climate changes weren't presented to the population.

Thus, this paper aims to investigate the queries made by the affected population in public consultations of new Transmission Lines in Brazil. And verify if the characteristics of the Brazilian regions influence the content of the inquires. Moreover, present improvements to the public consultation model, considering the recurrent doubts of the local affected community and their own perspective regarding the new project.

Keywords: public consultation, transmission line, energy projects, Brazil

1 – Introduction

According data from ref. [1] in December 2019, 84.2 million (99,0%) of consumers were connected to the National Integrated System (SIN). Regarding the SIN generation capacity, between 2006 and 2019, it was registered a growth from 96.3 to 170.1 GW (76.7%). Moreover, since 2006 to 2020, the transmission system had an annual average expansion of over 3%, a total of 145.600 km of transmission lines [2][3] [4]. This number shows that the Brazilian system is so extensive that is equivalent to the entire European Union system [3].

The Expansion plan for 2021-2025 stress an increase of approximately 2% in the total extension of the transmission lines (TL) and an 8% in the nominal power installed. Therefore, in the end of December of 2020, more than six thousand kilometres of new transmission lines were built in Brazil, totalizing almost one hundred and sixty thousand kilometres of Transmission Lines. For a future scenario, in 2025 it is expected that the Transmission Lines overcome one hundred and eighty thousand kilometres [4].

* Corresponding author.

E-mail address: gisela.mello@ua.pt

Therefore, facing this scenario it is relevant to reflect on how to ensure a sustainable expansion of the system and how to manage the social and the environmental impacts [5], once the major loads are located in the Southeast region. Additionally, Brazil present areas densely occupied, with high environmental sensitivity due to their heritage, which are challenges for the expansion of the Brazilian transmission system. These issues may raise the budget, cause environmental difficulties to approval of new projects, but also transpose through more sensitive areas or increase the number of affected populations [5].

Hearing the affected population is a part of the process of new transmission lines implementation through public consultations during the environmental license. The participation in public consultation allows to engage the local affected population and divide public decision-making responsibilities, but also provides relevant information to the decision makers [6].

2 – Public consultation in Brazil

The current Brazilian auction model for new transmission lines operates through contract concessions given to the auction winner in order to provide electricity generation transmission services, which includes the construction, the operation and the maintenance, in general, for 30 years [5].

In this context, the public consultation is conducted by the Environmental Agencies, at the beginning of the feasibility stage when all technical and environmental aspects related to the project are analysed. After this stage, public consultation is no longer held [5]. According to the Brazilian law, the public consultation are mandatory for projects that generate significant environmental impacts.

As described by ref. [6] the public consultation aims to involve citizens in decisions, but also recognize the real communities' necessities and priorities. In addition, it is an important instrument for social inclusion, as social participation may be relevant to reach democratic values in public governance, reflecting legitimacy, justice and effectiveness [7]. Also, by the point of view of public administration, it may be used in order to identify and prioritize problems.

Besides that, the public consultation aims, not only, to make clear the content of the environmental studies affected areas and communities; positive and negative impacts; control, protective, mitigate and compensatory measures for these impacts), but also to clarify questions, collect reviews, information and suggestions from the affected people. In addition, is an opportunity to collect complementary information and acknowledge the local community perspective to the environmental studies in order to analyze the feasibility of the project, by the environmental agency.

3 - Methodology

For this research, environmental studies and inquiries from 46 public consultations conducted by Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) were consulted, between 2010 and 2020. In total, 1053 inquires of 15 new transmission lines projects were analysed. The percentage of public consultations and inquiries per each Brazilian geographic region were represented in Fig 1 and Fig 2.

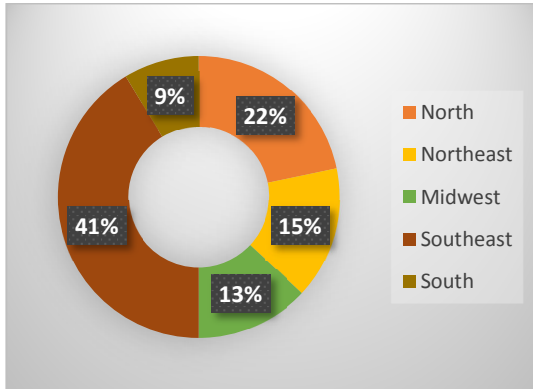


Fig 1. Percentage of public consultation per Brazilian region. Source: Own elaboration.

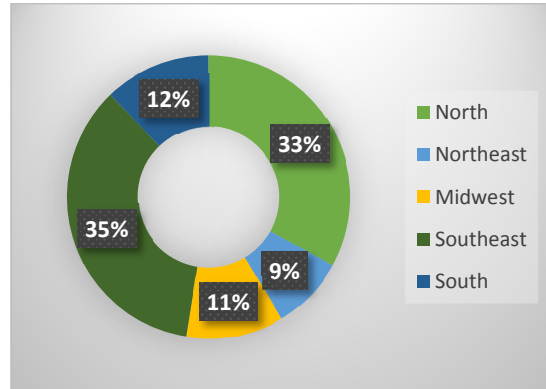


Fig 2. Percentage of questions per Brazilian region. Source: Own elaboration.

Based only in the main matter of the queries and the similarities between them, 11 main topics were identified. The percentage of the inquires per cluster is presented in Fig 3.

Thus, the next step of this research was to analyse the results and compare with some economic, social and environmental characteristics of the five geographical regions of Brazil in order to verify possible connections and influences in the main subject of the affected population questions.

4 - Results and Discussion

First, it is important to highlight that Brazil is the fifth-largest country in the world in terms of surface area, with 8.514.204.90 square kilometers, it is divided in five statistical regions (North, Northeast, Southeast, Centre-West and South) and has 5565 municipalities [8].

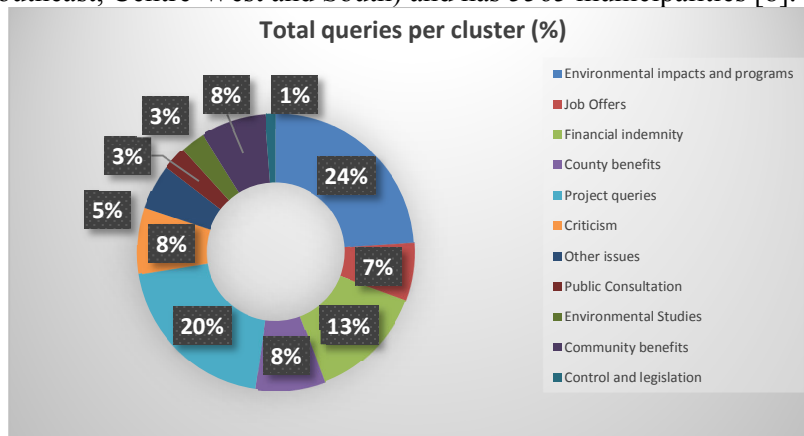


Fig 3. The percentage of the inquires per cluster. Source: Own elaboration.

Regarding the results of Fig 3, it is observed that the main queries about the projects are related to the environmental impacts and measures, which include the effects to the environment and to human health, and the measures that will be adopted in order to avoid and mitigate the possible impacts, but also what are the restrictions related to agriculture and livestock. The second subject was associated to the project queries which include technical doubts such as risks of the project and accidents, affected area, layout and tracing. The following topic was the financial indemnity regarding to the interception of the TL in private property, which may

lead to an interruption of some activity, damages and buildings removal. The community benefits stressed the population requests which include public sanitation measures, health care and energy supply, while the county benefits are related to requests for financial support for social projects and construction works at the community, as bridges and roads. The Criticism category includes complains related to the project itself and the TL design. The Other issues group covers comments, questions and compliments. Additionally, the public consultation, environmental studies and control and legislation cover specific questions associated with these subjects.

Fig 4. Inquire groups that most generated doubts by the participants of the public consultation per Brazilian region. Source: Own elaboration.

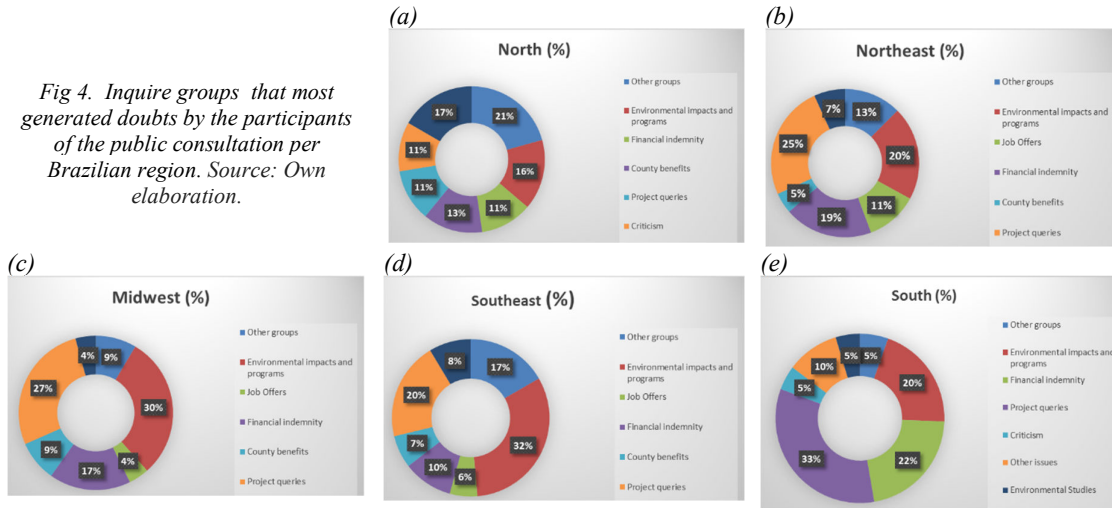


Fig 4 presents the groups of questions most recurrent in the public consultations per Brazilian region. These results highlight that the environmental impacts and programs questions are the main concerns in three regions, similar as “project queries”, which is expected due to the main purpose of the public consultations. The criticism cluster was observed in four regions due to previous experiences with other projects or to a lack of benefits to the community. Similar reasons may be replicated to the questions related to the financial indemnity. In the other hand, the county benefits, community benefits and job offers appear in regions where are verified high percentage of poverty and social and economic disparities.

As pointed out by ref. [9], Brazil has spatial inequalities, regarding the socioeconomic indicators it follow a macro-regional pattern: North and Northeast regions have the worst rates, while the Midwest has intermediate rates, while the South and Southeast have the best rates. According to IBGE data the Northeast region presents 47.9% of the proportional value of poverty concentration, followed by the North region (26.1%), Southeast (17.8%), South (5.7%) and Midwest (2.5%) [10]. Moreover, the North region has the lowest average family income in the country and the Northeast, the second lowest average but has the highest population density, less than a third of the national population (27.3%) in the country.

According to the IBGE data, the Southeast region contributes significantly to the inequalities, followed by the South and Northeast. This contribution may be explained due to the high population density in a given region, concentrating most of the national income, if compared to the lower income population.

Another important fact also emphasized by ref. [9] is that these current inequalities are derivative from a defective process of structural development, which may explain the underdevelopment regarding ecological, economic, social and political aspects. Also, the historical development process of each region may justify the regional imbalances.

5 - Conclusion

This research aimed to identify the main issues raised by the population during public consultations concerning energy projects, and to verify potential connections between the Brazilian regions characteristics and these inquires. Thus, based on the evaluation of the queries, it is possible to recognize that the effects of the current reality of the affected people and the previous experiences affect their perception regarding new energy projects.

When the content of the inquires is analysed certain aspects draw attention. First, an unfamiliarity of the population about basic and general subjects presented during the consultation, as the life cycle of the project implementation, legislation and the differences between generation and transmission systems. Second, there were a high number of doubts about the project, namely about the environmental impacts and the technical characteristics. Third, there were complaints mostly related to another projects and to the lack of public policies, namely public energy programs. Moreover, it is also observed a significative number of demands for schools, energy, sanitation and public health, cell phones . And last, there were also verified conflicts between the public interest and the private interest and political interests. With this in mind, the current public consultation model may not be fully effective to clarify the main doubts of the affected population, as the content of the queries are recurrent in consultations, regardless the region. However, the social and economic characteristics of the Brazilian regions may influence the subjects of the queries, when county and community benefits or financial indemnity are equally or more important than the environmental impacts of the project.

Therefore, the project differences, the affected area and population, and other aspects, should be used to improve the main topics which will be discussed, but also the format of consultations and the way in how these content will be transmitted, as there are still many technical terms that are difficult to understood.

Acknowledgements

This work was supported by the research unit on Governance, Competitiveness and Public Policy (UIDB/04058/2020), funded by national funds through FCT - Fundação para a Ciência e a Tecnologia.

References

- [1] EPE. (2020), Anuário estatístico de energia elétrica 2020. Retrieved from: <https://www.epe.gov.br/sites-pt/publicacoes-dados-abertos/publicacoes/PublicacoesArquivos/publicacao-160/topico-168/Anu%C3%A1rio%20Estat%C3%ADstico%20de%20Energia%20El%C3%A9trica%202020.pdf>
- [2] Bajay, S., Jannuzzi, G., Heideier, R., Vilela, I., Paccola, J., Gomes, R. (2018), Geração distribuída e eficiência energética: reflexões para o setor elétrico de hoje e do futuro. 1. ed.
- [3] de Oliveira, P. H. S., Silva, B.B., Silva, D. F.A., Granai, F.B. (2020), Mercado Brasileiro de energia elétrica: um ensaio econométrico (2020-2029)
- [4] ONS. (2020), Sobre o SIN: O Sistema em números. Retrieved from: <http://www.ons.org.br/paginas/sobre-o-sin/o-sistema-em-numeros>.
- [5] de Araújo, F., Mello G. (2017) 'Impactos socioambientais no descomissionamento de linhas de transmissão de energia', *XXIV SNTPEE Seminário Nacional de Produção e Transmissão de energia elétrica*, Curitiba.
- [6] Saab, F., Bermejo, P.H.d.S., Garcia, G.C., Pereira, J.S., Silva, S.d.A.M. (2018), Does public consultation encourage social participation?, *Journal of Enterprise Information Management*, Vol. 31 No. 5, pp. 796-814. <https://doi.org/10.1108/JEIM-11-2017-0169>
- [7] Fung, A. (2015), Putting the Public Back into Governance: The Challenges of Citizen Participation and Its Future.
- [8] OECD (2013), OECD Territorial Reviews: Brazil 2013, OECD Territorial Reviews, OECD Publishing, Paris, <https://doi.org/10.1787/9789264123229-en>.
- [9] Silva, S. (2017). Regional Inequalities in Brazil: Divergent Readings on Their Origin and Public Policy Design. *EchoGeo*. 41. 10.4000/echogeo.15060.