Aspects of public consultation for new energy projects in Brazil

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Abstract

The public consultation is part of the implementation process for new infrastructure energy projects in Brazil, it 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. In addition, it's 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 evidences that factors such as: spatial dimensions and geography of Brazil, different biomes, cultural and economic aspects influence the questions performed during the consultations. As well as, 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 questions of the public consultations. And, topics like climate changes weren't presented to the population.

Thus, this paper summarizes the main questions raised by the populations to be affected correlating with the socio-environmental characteristics of the implementation regions and the projects energy transmission environment reports. In order to present improvements to the public consultation process, considering the importance of the factors pointed out in the preparation of the public consultation by the environmental agency and entrepreneurs.

Keywords: public consultation, transmission line

1 – Introduction

According data from EPE (2020) in December 2019, 84.2 million (99,0%) of consumers were connected to the SIN. Regarding the SIN generation capacity, between 2006 to 2019, it was registered a growth from 96.3 to 170.1 GW, or 76.7%. Moreover, since 2006, the transmission system had an average annual expansion of over 3%,had a total of 141,888 km of transmission lines (Bajay et al. (2018) and 145.600Km in 2020. This number shows that the Brazilian system is so extensive that are equivalent, in extension, to the European Union system.

The operation planning for 2021-2025 stress an increase of approximately 2% in the total extension of the transmission lines (TL) and a 8% in the nominal power installed. Therefore, in the end of December of 2020, Brazil were built more than six thousand kilometres of new transmission lines which 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 (ONS, 2019).

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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 (de Araújo & Mello, 2017), once the major loads are located in the Southeast region. Additionally, Brazil presented areas densely occupied, high sensitivity environmental or protected due the heritage or relevance which are challenges for the expansion of the Brazilian transmission system. These issues may lead to raise the budget, cause environmental difficulties to approval new projects, but also transposing through more sensitive areas or increasing the number of affected population (de Araújo & Mello, 2017).

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 involve the local affected population and divide public decision-making responsibilities, but also provides relevant information to the decision makers (Saab et al., 2018).

2 – Public consultation in Brazil

In summary, the auction model is used in Brazil to implement new transmission line, through contract concessions for the provision of the public electricity transmission and generation service, which includes the construction, operation and maintenance of new projects through auction for a period of operation of the system, in general, of 30 years. The Brazilian government Agencies conduct the planning and feasibility steps through Technical-Economic and Socio-Environmental Feasibility Studies, called R Reports, that are the baseline for the auctioning phase.

In the following phase, the auction winner should submits its project to the environmental licensing agency. The licensing phase is divided into three basic stages, namely: feasibility, implementation and working phases. In this context, the public consultation is conducted by the environmental agency at the beginning of the feasibility stage when the socio and environmental aspects of the project are analysed. After this stage public consultation is no longer held (de Araújo) The public consultation for projects that generate significant environmental impacts is mandatory and it is stablished by the Conama Resolutions nº09/87 and 287/97 and occurs only once during the all decision flow for the implementation of a new TL.

As described by Saab et al. (2018) 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 a powerful measure of the achievement of democratic values in public governance, reflecting legitimacy, justice and effectiveness (Fung, 2015), and it can be used by public administrators to identify, understand and select which public problems should be prioritized (Nabatchi, 2010).

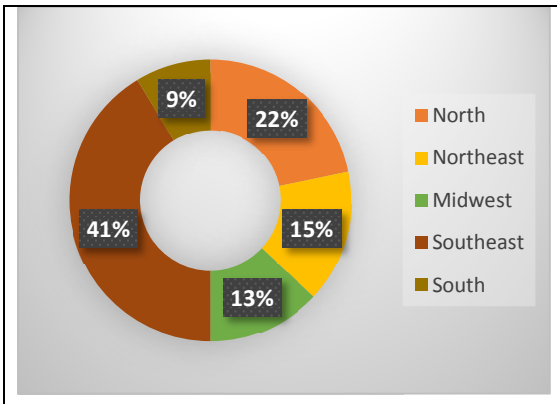
Besides that its use to clarify questions, receive critiques, information and suggestions from the affected people. In addition, another objective is collecting data to analyze with the environmental studies in a way to elaborate a conclusive technical report about the project by the environmental agency public consultation.

So, in public consultation it is presented the content of the environmental studies (diagnoses, affected areas, positive and negative impacts, mitigating/compensatory measures and environmental/social programs);

3 - Methodology

For this research it was used as database, all documents available and related to the public hearings in the environmental licensing files at the Brazilian Institute of Environment and

Renewable Natural Resources (IBAMA). In total, were 1053 formal inquires of 46 public consultations and technical meetings of 15 new transmission lines licensed by the and performed between 2010 and 2020. In this review were included two public consultation which took place in online format due the restrictions of COVID-19 pandemic. Thus, the number of public consultation per each Brazilian geographic regions was: 10 in the North region; 7 in the Northeast; 6 in the Midwest; 19 in the Southeast and 4 in the South. The graphics bellow show the percentage of the public consultations and questions per each Brazilian geographic regions.



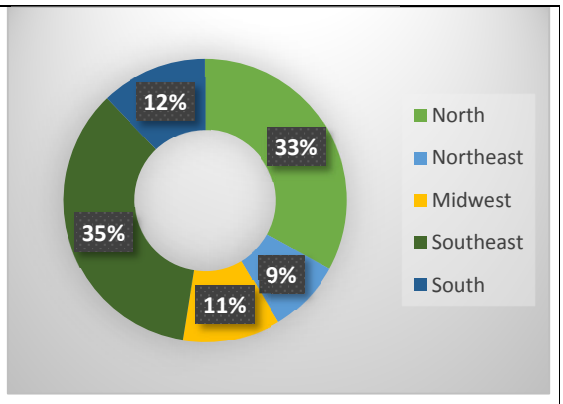


Fig1. Percentage of public consultation per Brazilian region. Fig 2. Percentage of questions per Brazilian region. Source: Own elaboration.

In preliminary verification, 11 main topics were identified, and according to their similarity, the 1053 inquiries were merged. The main groups are: (I) Environmental impacts and programs; (II) Job Offers; (III) Financial indemnity; (IV) County benefits; (V) Project queries; (VI) Criticism; (VII) Other issues; (VIII) Public Consultation; (IX) Environmental Studies; (X) Community benefits and (XI) Control and legislation.

After this cluster, the next step was to analyze 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

Regarding to the topics, the results presented in table 1 for the total inquiries showed that the main topic of concern is related to the environmental impacts and programs, which include the effects to the environment and human healthy, what the measures that will be adopted in order to avoid and mitigate the possible impacts, 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, 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, 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 other.

Groups	Total (%)	North (%)	Northeast (%)	Midwest (%)	Southeast (%)	South (%)
Environmental impacts and programs	23,93	15,52	20,45	29,91	31,99	20,31
Job Offers	6,74	9,77	11,36	4,27	5,65	0,78

Financial indemnity	13,58	11,49	19,32	17,09	10,22	21,88
County benefits	8,07	13,22	4,55	8,55	6,72	0,00
Project queries	20,13	11,49	25,00	27,35	20,16	33,59
Criticism	7,69	10,92	0,00	4,27	8,60	4,68
Other issues	5,32	5,75	5,68	1,71	4,30	10,15
Public Consultation	2,85	3,45	3,41	1,71	2,96	1,56
Environmental Studies	2,85	0,86	6,82	0,85	3,76	4,69
Community benefits	7,60	16,67	2,27	3,42	4,03	0,78
Control and legislation	1,23	0,86	1,14	0,85	1,61	1,56

Top 5 of groups subject per Brazilian region				
North	Northeast	Midwest	Southeast	South
Environmental impacts and programs	Project queries	Environmental impacts and programs	Environmental impacts and programs	Project queries
Project queries	Environmental impacts and programs	Project queries	Project queries	Financial indemnity
County benefits	Financial indemnity	Financial indemnity	Financial indemnity	Environmental impacts and programs
Community benefits	Job Offers	County benefits	Criticism	Criticism
Criticism	Other issues	Criticism	County benefits	Public Consultation

The table 2 presents the 5 inquire groups that most generated doubts by the participants of the public consultation per Brazilian region, in order to observe possible similarities and differences between the regions.

Thus, questions related to the environmental impacts and programs are recurrent in all regions, as project queries, which is expected due the aim of the public consultation. The criticism cluster was observed in four regions, to the new project, due previously experiences with other projects or their own reality. Similar reasons may be associated for the questions related to the financial indemnity questions. public consultation

In the other hand, the County benefits, Community benefits, Job Offers appears in regions with poverty, social, economic issues. Which led us to evaluate some physical, social and economic aspects of these regions in order to observe some relationship with the questions.

most relevant aspects characterizing the country is spatialinequalities, notably the regional-related ones. Whichever the socioeconomic indicatorused to assess them, they always follow the same macro-regional pattern: Brazil's Northand Northeast areas have the worst rates, while its central area has intermediate rates,and the South and Southeast areas have the best rates,

As Brandão (2013, p. 27) notes, Furtado believes the regional inequalities are within aprocess of structural malformation, which is at the core of underdevelopment, in whichecological, economic, social, and political dimensions intertwine. In terms of structures,Brazil's regional heterogeneity in the mid-20th century created a plethora of forms ofunderdevelopment generated in the scope of a historical process,

n Cano's perspective (2002, p. 126), the problematic of regional imbalances in Brazilresults from the historical development process of each region (Regional Inequalities in Brazil: Divergent Readingson Their Origin and Public Policy Design)

Based on the reviewed public consultation inquires it is possible to interpret and xxx the results regarding the subject and the process itself.

Regarding the content of the inquires it were observed a high number of queries about the project which include the environmental impacts and technical characteristics. Complaints

(from another projects and lack of public policies, namely energy); Demands (schools, energy, sanitation and public health, cellphones); transfer of responsibility to public policy firms
Additionally, the unfamiliarity of the population about topics as the life cycle of the project implementation, legislation and Generation Sources X Transmission System. Public interest X Private Interest; Political interests and motivations;

5 - Conclusion

In summary, this research sought to assess the main issues raised by the population during public consultations, but also verify possible influence of the different characteristics of the Brazilian regions in the inquires contents. Based on the results, the current reality or their perception of the affected people and previous experiences influence the type of the question or request. With this in mind, the current public consultancy models may not be fully effective as do not consider these aspects.
With this survey, it is possible to improve the audience's progress by focusing on more recurring themes in order to clarify the population's doubts, especially if we consider that regional characteristics can affect the questions that will be asked by the participants. Thus, this should be a continuous work of improvement.
In addition, it aimed to encourage discussions to improve the public consultation process in relation to the format of the meeting and the way in which the content is transmitted, as there are still many technical terms that are difficult to understand. Bearing in mind that the current public consultancy models are not fully effective and a revision is necessary to improve the process, with the participation of the other government sectors. Social communication projects carried out by companies, at all stages of licensing, are more effective and make up for the lack of public. With this survey, it is possible to improve the audience's progress by focusing on more recurring themes in order to clarify the population's doubts, especially if we consider that regional characteristics can affect the questions that will be asked by the participants. Thus, this should be a continuous work of improvement.
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