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The landscape in environmental impact assessments of wind farms in Rio Grande do Sul, Brazil

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Of the human enterprises that modify the landscape, one that is in evidence of studies and discussions is the wind farms (WF). Starting from the premise of a source of low environmental impact, with public policies to encourage and finance private business, WF expanded rapidly in Brazilian territory. Currently, Brazil has 809 WF in operation, totaling 21.5GW of installed power. Of these, 81 parks and 1.83GW are located in Rio Grande do Sul (RS), the main producer of wind energy in southern Brazil (ANEEL, 2022).

The operation of wind turbines in Brazilian spaces introduces new functions, values and intentions, changing the materiality of the landscape and, consequently, the concreteness of the symbolic representations of society. These morphological changes on landscape are not harmless and must also be analyzed in the context of social practices (LUCHIARI, 2001). Therefore, it must be considered that the landscape does not reside only in the object (nature), nor in the subject (society), but in the complex interaction between these two entities that are mutually related (BERQUE, 1994).

Alterations of the landscape frequently appears in studies on the most relevant negative environmental impacts of wind farms. However, some questions about this impact still remain unanswered, namely: What is this alteration? In what perspective was this change carried out? How to manage the impact in question? How to mitigate this impact that remains on the landscape in the medium to long term (at least 20 years)?

The studies for environmental licensing of these projects (Environmental Impact Studies and Simplified Environmental Reports) must be based on the existing regulations that guide the potential to understand, evaluate and manage the alteration of the landscape. However, after a detailed analysis of these available studies, this was not the reality observed in the wind farms of RS. Of the fourteen studies analyzed, only five carried out a landscape analysis, presenting a detailed theoretical and methodological framework. It is possible to affirm that the other eight studies did not analyze the landscape, they just cited it in a disorderly way. This analysis allowed us to conclude that, in general, with exceptions, the environmental studies that guide wind farms in RS present the understanding of the change in the landscape only as a modification of what is seen from the inclusion of new forms in the areas studied. That is, considering it in a static way and not in its dynamics and complexity, in terms of changes in the forms, structures, functionalities and dynamics of the landscape.

This study is part of the doctoral thesis project that will seek to present a methodology for landscape analysis in WF environmental studies. Starting from a consistent theoretical basis, it is expected to contribute to applied studies about the landscape. Disseminating the use of landscape as a category of analysis with recognized and due theoretical and methodological basis enshrined in the international academic literature.