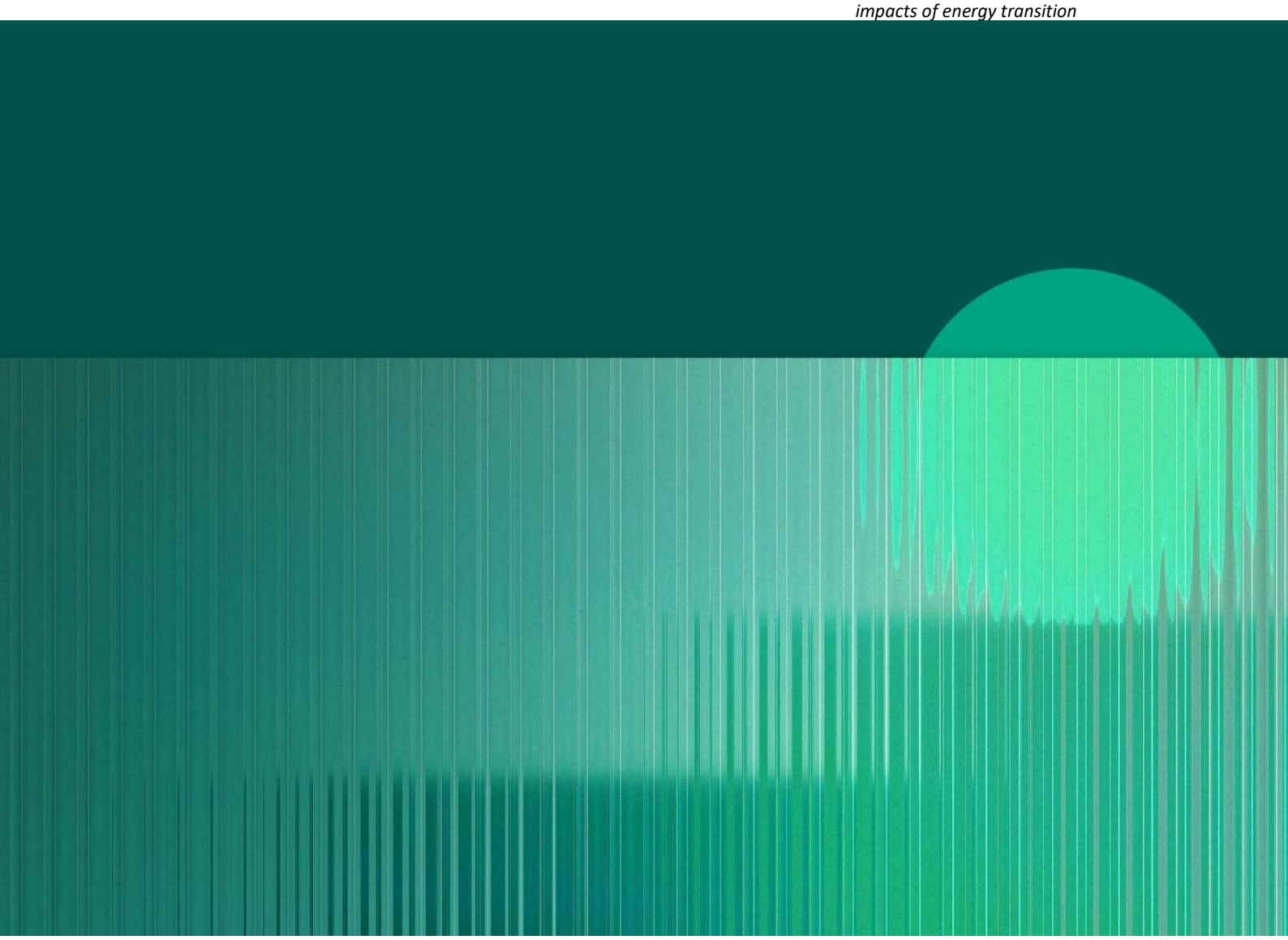

Ethnographic research about the social impacts of energy transition (D7.1)

Research infrastructures cooperation for energy transition between European and Latin American and the Caribbean countries.

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Executive Summary

The report named: “Social Tensions Surrounding Decarbonization in Ibero-America” presents the results of the CSIC’s participation in the scientific cooperation project *EULAC for Energy Transition*, coordinated by the Organization of Ibero-American States (OEI). It corresponds to the Deliverable 7.1. “Ethnographic research and report about the social impacts of energy transition in Ibero-America”, whose elaboration has benefited from the social impact mobilities foreseen under WP6 of the Energytran project.

The contribution of CSIC to this project is a qualitative research, combining ethnographic methodologies and archival inquiry, along with a comparative analysis of ten case studies focused on the sociopolitical processes of energy transition currently taking place in the Ibero-American space. Its main objective is to understand some of the logics that are hindering the decarbonization of Ibero-American economies, while promoting methods to accelerate it in ways that also enhance well-being, sustainability standards and criteria of social justice.

For this task, we have paid particular attention to two analytical dimensions:

(i) the opportunities that the energy transition offers to renegotiate the patterns of international economic integration of Ibero-American countries through green reindustrialization.
(ii) the conflicts arising from the territorial impacts of new energy infrastructures.

The contents of the report are structured into three main sections, each responding to a distinct motivation:

-First section serves as a brief theoretical introduction with a pedagogical intent of the contributions that the social sciences and humanities can make to the public debate on energy transition.

-Second section presents the methodological approach, the case studies and the results of our comparative analysis.

-Final section outlines the main conclusions of our research and proposes general policy recommendations to promote a just energy transition in the Ibero-American region.

Decarbonization is one of the most profound and decisive transformations of our time. The coming years will define not only the energy matrix of the future, but also the type of society that will sustain it. The results of the study show that its success will depend on the ability of states and societies to reconcile the speed required to carry out this transformation with the generation of socio-environmental legitimacy. To ensure effectiveness and social acceptance, public policies for the energy transition must combine economic prosperity, territorial justice, and ecological responsibility.

Process followed for the elaboration of the Ethnographic Report on the social impacts of the Energy Transition

In our empirical approach to the social tensions surrounding energy transition processes in the Ibero-American region, we have opted for a qualitative methodology aimed at understanding the meanings, discourses, affects, and imaginaries that traverse the positions of the various actors (both individuals and institutions) involved in decarbonization dynamics. This methodological strategy combines fieldwork with historical and documentary research.

Fieldwork, conducted between November 2024 and August 2025, was based on in-depth semi-structured interviews, carried out both in person and online, along with informal conversations and participant observation. The interviews and conversations covered the full range of actors and perspectives involved in each of the studied contexts. Rather than following a statistical logic (interviewing a large number of people), this type of qualitative technique responds to a structural logic: interviewing key informants. In other words, the aim is to densely cover the discursive space defined by certain crucial positions. Through this combination of techniques, we sought to capture the complexity of the conflicts associated with a structural change that entails not only technological transformations but also political disputes, cultural reconfigurations and new forms of social organization.

Furthermore, to analyze the imaginaries of energy transition, it was necessary to integrate a historical and cultural perspective that allows us to understand how current conflicts relate to inherited legacies. In this regard, research was carried out in institutional archives linked to past energy infrastructures (particularly those related to the mining-metallurgical industry and hydraulic works) as well as a review of audiovisual productions ranging from industrial cinema to contemporary narratives on the transition to renewable energies.

Based on this approach, ten case studies were selected that encapsulate significant aspects of the two key social challenges of the energy transition defined as priorities in the research: disputes over territorial justice and green industrialization policies. The case studies include:

- Lithium mining in Argentina and Chile
- Energy transition challenges in Costa Rica
- Territorial conflicts associated with renewable energies in Mexico (Yucatán) and Spain (the Basque Country, Almería, León and Zamora)
- Conflicts around mining projects in the Corneja Valley in Ávila (Spain).
- Green reindustrialization processes in Asturias (Spain).
- Projects for energy access for vulnerable communities in Corrientes (Argentina)

These cases span a wide geographical range allowing to draw a broad map of the sociopolitical tensions of energy transition in the Ibero-American region. At the same time, case selection sought a complex balance between common and divergent elements to enable comparative analysis: socioeconomic contexts, governance models, actors involved and types of energy infrastructures.

This multi-situated and comparative approach has proven particularly fruitful for identifying factors that facilitate or hinder decarbonization processes and, at the same time, for formulating public policy recommendations aimed at achieving a socially and environmentally just energy transition with the urgency it requires.

Key aspects included in the Ethnographic Report on the social dimension of the Energy Transition

Based on an understanding of the energy transition as a broad process of social, economic, and political transformation, the study proposes an “energy quadrangle” in which sustainability, security, competitiveness and equity constitute the central pillars of energy governance.

The research findings are organized into four sections that correspond both to the analytical axes initially defined and to additional dimensions that have proven essential for understanding the complexity of the social tensions under study: industrialization policies, territorial justice claims, sociocultural elements and imaginaries, and socio-environmental impacts.

a) **Industrialization policies**: in the Ibero-American region, leveraging the energy agenda as a historical driver for implementing ecologically oriented industrial policies capable of improving national productive models remains a latent and complex possibility, marked by ambivalences and open to highly divergent developments. The results of our field research offer several relevant insights into this ambiguous situation, which deserve to be incorporated into the public debate: the importance of a high-resolution perspective that is sensitive to the specificities of each industrial sector, how the uncertainties and continuous transformations of national political contexts and the global geopolitical landscape influence the possibility of developing successful industrial policies and the assessment of the actual capacity of States to design and implement ambitious industrial policies after several decades of neoliberal hegemony.

b) **Territorial Justice Claims:** the agenda of territorial justice and the underlying dispute over the very concept of territory, constitutes one of the most significant sources of social tension currently hindering the rollout of the energy transition in Ibero-America. It therefore represents one of the most complex outstanding challenges for energy public policies in the region to attain a strong degree of socio-environmental legitimacy. The research conducted has allowed to identify several key aspects for understanding these challenges: the centrality of the social license of any project related to the energy transition that may generate socio-environmental impacts as a hallmark of our time; the underlying disputes surrounding the notions of territory and energy transition and the way they encompasses broader historical conflicts; the complexity of local populations’ positions and assessments regarding the installation of such projects; and the importance of public policies on territorial

planning, benefit-sharing, and democratic participation mechanisms to ensure just transition processes with a high degree of social acceptance.

c) **Sociocultural Elements and Imaginaries:** the analysis of territorial conflicts associated with the energy transition must take into account the sociocultural elements that shape them. Sociocultural imaginaries, collective identities, values, affects, and the meanings attributed to energy infrastructures and transformations are central components of socio-energy regimes, and therefore key elements for understanding the diverse positions and debates emerging around decarbonization processes. As the research have shown, socio-cultural imaginaries are not a superficial layer of energy systems but a central component of their social reality. Ignoring them means overlooking a key dimension of socio-energy conflicts and of the resistances faced by many transition policies. Incorporating them into analysis, on the other hand, allows for the design of intervention strategies that are more responsive to diverse demands, more democratic and politically more viable in the long term. Without analytical and creative work on imaginaries, the energy transition risks lacking narrative, adhesion and, ultimately, legitimacy.

d) **Socio-environmental impacts**: all the socio-energy conflicts addressed in this report are marked by concerns regarding the consequences that the construction of infrastructures required for the energy transition may have on ecosystem balance, biodiversity loss and the overexploitation of increasingly scarce water resources. In this regard, the case studies have allowed us to identify a persistent tension between the urgency of implementing decarbonization processes to mitigate the climate crisis and the environmental costs that, at the local level, may result from the installation of renewable energy technologies or the mining of key elements for that transition. This compels us to reflect on the dilemmas surrounding the procedures and instruments available to societies for assessing and minimizing the local environmental impacts of projects associated with decarbonization, the politics of knowledge for promoting socioenvironmental sustainability in energy transition as well as on the debates concerning the very concept of environmental damage.

Main conclusions and Policy Recommendations

One of the major defining challenges for the Ibero-American region in the coming years is to undertake the decarbonization process committed to under the Paris Agreement, with the urgency required by the worsening of anthropogenic climate change. Achieving this will demand that decarbonization policies, in their many forms, overcome the eco-political tensions that currently threaten the fulfilment of these goals. The research has shown that attaining this general objective requires four accompanying conditions:

-Decarbonization policies must be socially and territorially just. Comparative grievances, both in terms of impacts and efforts, whether across income levels and social classes, geographic inequalities between territories or gender disparities, constitute one of the greatest obstacles to decarbonization processes. Only a transition perceived as equitable and inclusive by all actors involved will be able to proceed at the pace required by scientific warnings and take advantage of the comparative strengths offered by the Ibero-American context.

-Decarbonization policies must be environmentally sustainable. The ecological dimension of the current polycrisis is itself multidimensional. Greenhouse gas emissions, though singular in their irreversibility and global traumatic effects, are only one of the planetary boundaries that humanity has exceeded and must now restore. It is therefore essential that decarbonization be a synergistic process that also helps to address other pressing environmental problems of our time, such as biodiversity loss and water overexploitation.

-Decarbonization policies must foster innovative horizons of economic prosperity. Increasing wealth and improving the competitive position of nations around the world are possibilities opened by the new geopolitical configuration of the 21st century, namely, the shift from a fossil geo-economic order based on oil, gas and coal to a techno-electric order based on critical minerals and renewables. For the Ibero-American region, both in Europe and Latin America, this historical opportunity overlaps with a post-extractivist industrialization agenda, where green reindustrialization offers a path to diversify economies overly dependent on raw material exports or low value-added services.

-Decarbonization policies must ensure energy security in an unstable world. The disintegration of the neoliberal order that emerged in the 1990s, triggered by the 2008 financial crisis and accelerated in the past five years by successive disruptive events (the pandemic, inflation, Russia's invasion of Ukraine, the Israeli genocide in Gaza, and the second Trump presidency), has revived legitimate concerns about the security of energy supply. Many renewable sources depend on local resources such as sun and wind, making decarbonization an inherently secure option for

energy provision. Yet the overall picture is more complex: on the one hand, certain renewables, such as hydropower, depend on transnational geographical spaces (river basins) that may give rise to socio-energy conflicts; on the other hand, the supply chains for minerals (both raw and processed) and for energy-capture or electrification technologies display highly concentrated access patterns, generating frictions and preventive distrust in which China plays an essential role.

Policy Recommendations

General Recommendations for a Just, Rapid and Prosperous Decarbonization	Recommendations for promoting Green Industrial Policies in Ibero-America	Recommendations for improving Territorial Justice in the Energy Transition
Promote comprehensive diagnoses developed by transdisciplinary research teams that integrate humanities and social sciences expertise with direct field knowledge.	Consolidate national industrial horizons, either through consensus or the construction of productive hegemonies, within a reinforced regional cooperation framework.	Fund scientific research aimed at establishing official baselines for currently non-existent or disputed ecosocial data, linked to open public models that enable real-time monitoring of environmental problems.
Design benefit-sharing mechanisms that are perceived and experienced in a tangible way by the broader population.	Promote policies that ensure sovereign control over strategic resources.	Develop and implement territorial planning criteria for the deployment of renewable energy infrastructures, establishing preferred and excluded areas for installation, territorial saturation thresholds and mechanisms to assess the cumulative and synergistic impacts of projects.
Promote regional cooperation as a strong guiding principle of decarbonization policies, with the aim of developing shared infrastructures and institutions.	Move toward a macro-financial regime favorable to industrial policy.	Ensure public transparency of procedures and develop effective mechanisms for democratic participation and guaranteeing the rights of prior consultation, promoting spaces of social and intercultural mediation where necessary.
Create and promote cultural and aesthetic initiatives that foster imaginaries of the energy transition capable of shaping public understanding, inspiring social support and reflecting the future aspirations of Ibero-American societies.	Promote industries with high scientific and technological content and to establish incentives for public–private technology transfer.	Establish mechanisms for a fair distribution of benefits in projects associated with the energy transition and include socio-cultural impact indicators in environmental assessment reports.
	Strengthen the institutional capacity of Ibero-American States by consolidating a specialized green public administration corp.	Develop policies that promote self-consumption and energy communities that accompany the large-scale deployment of renewable energies, through specific financing lines, accessible regulatory frameworks and technical and social support programs, aimed at facilitating universal access to energy and promoting decentralized energy models.

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