Dossier: Just energy transition

Dossiê: Transições energéticas justas

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ARTICLE – DOSSIER

The concept of *just energy transition* has as many definitions as there are interpretations of "justice" seeking to legitimise it. Initially, it emerged as an application of "environmental justice" to criticise the impacts of energy infrastructure projects on socially disadvantaged groups based on class, ethnicity, and/or gender, depending on the specific project (Cha, 2017). Subsequently, different categories were identified to describe and evaluate these processes, such as "restorative," "distributive," and "procedural," among others. In the case of procedural justice, for example, it was important to determine to what extent energy planning would allow the participation of various stakeholders (local communities, scientists, and energy company workers), replacing top-down approaches with inclusive deliberation processes (Kirsten *et al.*, 2016).

The history of economic expropriation and human rights violations by large energy conglomerates has led an increasing number of researchers and activists to include the decentralisation and self-management of energy production and consumption among the criteria guiding the energy transition. In different contexts and with a focus on local specificities, academic research in "Energy & Society" has contributed to the discussion of new regulatory arrangements and instruments capable of fostering the creation and development of "energy communities."

It is important to avoid automatic associations between 'just energy transition' and the mere statistical increase in renewable energy sources. The Paris Agreement includes just transition as a guiding principle in addressing climate change. However, it does not translate into a fixed set of rules but into processes based on dialogue and a common agenda of workers, industries, and governments, formulating projects to be negotiated and implemented in their specific geographical, political, cultural, and social contexts.

Although climate justice is generally at the centre of discussions on energy justice, there are numerous instances where individuals and communities feel affected by renewable energy companies. Technological innovations still follow a market-driven model and are appropriated by companies engaging in a trillion-dollar business, concentrating wealth and decision-making processes not always distinctly from fossil fuel corporations. On the other hand, the idea that the diversification of energy sources alone characterises a sustainable transition is also controversial. In their analysis of Indian energy policy, Roy & Schaffartzik (2021) argue that, despite increased investments in renewable sources, the country is not moving towards a gradual phase-out of thermal power plants but rather towards a greater dependence on coal in its energy matrix.

In recent years, the concept of "just energy transitions" has taken on a new dimension, as academics and policymakers have used it as a tool for energy planning. Some countries have even established departments for energy transition and inter-sectoral programs to promote it. Despite these institutional advances, this notion should not conceal the contradictions of energy policies but instead be critically evaluated as a whole process, from fuel and electricity production to consumption, regarding their social aspects (Goldemberg & Moreira, 2005).

Indeed, energy consumption analyses highlight injustices, such as the disparities between Northern and Southern countries and differences in per capita energy consumption within each country. It is a double injustice because populations with relatively low energy consumption are among the most vulnerable to climate change. In this context, discussions on just transitions closely relate to research and public policies dedicated to overcoming 'energy poverty.' As part of the Sustainable Development Goals (SDG 7), the UN has urged to '*leave no one behind*' – an unequivocal commitment of all UN Member States to eradicate poverty in all its forms. Currently, 733 million people still lack access to electricity, and more than 2.4 billion depend on solid biomass for cooking (UNDP, 2013). Thus, there is an opportunity to align the promotion of a renewable energy-based sector with the fight against poverty.

Ignacy Sachs (2004) attributed the persistence of poverty to government failures and the disassociation of market forces from the poorest, which often make them socially invisible. Banerjee & Duflo (2011) and Amartya Sen (2008) share the understanding that poverty is not limited to income deficiency but also includes health problems, poor quality of education, and a life deprived of dreams and freedoms. Regarding Brazil, Pereira *et al.* (2011) pointed out that, despite the successful experience of the '*Light for All*' Program, the impacts of access to electricity on the beneficiaries' quality of life have not been sufficiently analysed. Understanding these gaps could improve the program so that beneficiaries gain the right to use electricity for development as they conceive it.

Delving into academic discussions and the broader public debate on *just energy transitions* requires clarity on what each interlocutor considers 'just' or 'unjust', as well as the explanation of the premises that underlie their respective notions of 'justice' (Uffelen *et al.*, 2024). There is not always consensus; sometimes, divergent proposals may derive from two or more valid premises. For example, when taken to the extreme, the sense of climate urgency may not coincide with the democratic decision-making principles of energy planning. In the first case, there is a dramatic and accelerated temporality, while in the second, time must be all that is needed to reach a decision oriented by the pursuit of possible consensus. Distinct and somewhat competing concerns might be articulated, but promoting just transitions requires a dialogue in which actors are clear about the energy justice they aspire to while being able to identify the premises of 'justice' that other parties mobilise to legitimise their values and interests.

Reaffirming its commitment to plurality and interdisciplinarity, *Sustainability in Debate* offers its readers a dossier on *just energy transitions* with qualified academic production of researchers from Brazilian and Latin American universities. This edition contains seven articles. The first one, 'Socioenvironmental conflicts and the implementation of wind farms in northeastern Brazil', discusses

wind energy advances in the Brazilian Northeast, focusing on the socioenvironmental conflicts affecting the population around the plants. Sonia Regina Paulino and her co-authors present a typology of local conflicts around four axes: economic, water-related, land-related, and health/well-being of affected populations. Next, the article 'Perception of socioenvironmental impacts caused by wind generators in the state of Piauí, Northeast Brazil' consists of a case study on wind energy in Serra dos Pereiros (PI), in which Rômulo Araújo and Adryane Gorayeb address the problem of social acceptance of the technology and the perception of members of communities surrounding the plant regarding procedural and distributive injustices.

In 'Institutional conditions for the development of energy communities in Chile and Brazil', Poque-González and co-authors present a comparative discussion on the consequences of different institutional arrangements for the advancement of 'energy communities.' The study suggests that the cooperative model benefits the development of grid-connected energy communities. In another contribution focusing on the Chilean reality, Gloria Baigorrotegui and researchers from the University of Santiago de Chile publish 'Energy Communities of Repair in Remote Infrastructures,' an ethnographic research based on the *Social Studies of Science and Technology* that addresses problems related to the maintenance of the energy network in Puerto Edén, the southernmost part of Patagonia.

Following this, the dossier presents two articles highlighting the complexity of transmission network planning. In 'Predictive Model of the Outage of Transmission Lines Exposed to Wildfires', Vaz da Costa and partners from the University of Brasília demonstrate the relevance of transmission lines for promoting access to renewable energy sources within SDG 7, weighing the risks associated with wildfires and their impacts on power supply outages, as well as the need for predictive models in planning. The sixth article, 'Geographic intelligence to integrate data, roles, and actors in sustainable planning of transmission powerlines,' presents the potential of so-called 'geographic intelligence' for modelling corridors during the study phase to identify alternative locations for energy transmission lines. Felipe Araújo and co-authors seek to demonstrate the applicability of spatial modelling to the local planning of transmission projects.

In this dossier's seventh and final article, Rodrigo Wolffenbüttel presents the results of his research on electric vehicles. In 'Limits of sustainability in electric cars, qualification of goods based on symbolic values,' he investigates how individuals mobilise 'functional and symbolic' values as criteria for acquiring electric cars. The author deserves credit as one of the few Brazilian researchers dedicated to electric mobility in the field of social sciences.

We hope you enjoy reading this issue!

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