Journal of
Countries Studies
EISSN: 2980-9193

The role of energy justice in achieving sustainable development in the world's countries

Hoda Mohammadhashem Jasbi ✹

Department of Business Creation, Faculty of Entrepreneurship, University of Tehran, Tehran, Iran.

Article Info

Original Article

Main Object: Economics
Scope: World's Countries

Received: 01 June 2025
Revised: 03 June 2025
Accepted: 05 June 2025
Published online: 10 June 2025

Keywords:
clean energy,
energy justice,
energy poverty,
sustainable development.

Abstract

Achieving sustainable development is one of the most important concerns of human societies in the 21st century. In this context, energy justice, as a key component of sustainable development, plays a vital role in ensuring equal, efficient, and sustainable access to energy resources. Considering the significant disparities in energy distribution and consumption among different countries worldwide, examining the role of energy justice in achieving sustainable development appears essential. Utilizing a Space Matrix and Software R, this study investigates the status of energy justice and its relationship with sustainable development indicators in various countries. Data related to energy and sustainable development indicators were collected from reliable international sources and analyzed using comparative and spatial matrices. The study's results show that nations exhibiting greater energy justice tend to achieve better sustainable development outcomes across environmental, economic, and social aspects. Additionally, spatial analysis of energy justice distribution worldwide uncovers clear geographic patterns, emphasizing regional inequalities and underscoring the necessity for focused policy interventions in energy-deficient regions. The findings of this research highlight the critical role of advancing energy justice as a key approach to attaining sustainable development objectives worldwide. It is advised that decision-makers, both nationally and internationally, implement thorough energy justice initiatives aimed at enhancing energy access, efficiency, and sustainability, ultimately supporting sustainable development across nations.

Cite this article: Mohammadhashem Jasbi H. (2026). "The role of energy justice in achieving sustainable development in the world's countries". *Countries Studies*. 4(1): 43-47. doi: https://doi.org/10.22059/jcountst.2025.396511.1299.

EISSN: 2980-9193
Publisher: University of Tehran

✹ ✉hodamohammadhashemjasbi@gmail.com, https://orcid.org/0009-0001-2300-742X

Extended Abstract

Introduction

Achieving sustainable development has become one of the foremost priorities for governments, international organizations, and research communities in the 21st century. It involves harmonizing economic growth, environmental protection, and social inclusion in a way that ensures the long-term well-being of societies. Among the essential components underpinning sustainable development, energy justice has emerged as a critical factor. Energy is not merely an economic commodity but a fundamental prerequisite for human development, environmental sustainability, and social equity. Nonetheless, profound disparities in access to clean, affordable, and reliable energy services persist both within and between countries. These inequalities present significant obstacles to global sustainable development efforts, limiting opportunities for economic advancement, social welfare improvement, and environmental protection, particularly in developing and marginalized regions.

In recent years, there has been growing scholarly and policy interest in the concept of energy justice, which emphasizes fair and equitable distribution of energy resources, fair processes in energy decision-making, and recognition of the rights of all stakeholders affected by energy production and consumption.

Aim

This study seeks to examine the role of energy justice in advancing sustainable development globally, with a focus on identifying spatial patterns of disparity and assessing how varying levels of energy justice relate to countries' performances in achieving sustainable development objectives.

Methodology

To explore this relationship, the study applies a spatial analysis methodology, using a Space Matrix (SM) to simultaneously examine the geographical distribution of energy justice indicators and their associations with sustainable development outcomes across different regions. The analysis draws on data from internationally recognized sources such as the World Bank, International Energy Agency (IEA), and United Nations Development Programme (UNDP). Indicators of energy justice were selected based on dimensions including access to clean energy, energy affordability, and the reliability of energy infrastructure, while sustainable development performance was measured using a range of indicators related to environmental sustainability, economic resilience, and social inclusion, consistent with the United Nations Sustainable Development Goals (SDGs).

Findings

The findings reveal a significant positive correlation between higher

levels of energy justice and improved performance in sustainable development indicators. Countries characterized by equitable and accessible energy systems tend to display stronger outcomes in environmental protection, economic growth, and social welfare. In particular, such countries achieve greater progress in reducing carbon emissions, increasing energy efficiency, promoting inclusive economic opportunities, and enhancing access to essential services like healthcare, education, and clean water. This suggests that ensuring fair and sustainable access to energy plays a central role in fostering broad-based sustainable development.

Spatial analysis further highlights distinct geographical patterns in the distribution of energy justice. Developed nations, particularly in Western Europe, North America, and parts of East Asia, consistently show high levels of energy justice alongside favorable sustainable development outcomes. Conversely, many developing countries in Sub-Saharan Africa, South Asia, and Latin America face acute challenges, including limited access to modern energy services, high rates of energy poverty, and weaker social and environmental performance. These spatial disparities emphasize the need for targeted and context-sensitive policy interventions aimed at addressing regional inequalities in energy access and consumption.

Conclusion

The study underscores the importance of integrating energy justice into national and international sustainable development agendas. Promoting equitable, affordable, and reliable energy access is not only a matter of social fairness but also a strategic necessity for advancing environmental and economic objectives. The research concludes by recommending that policymakers prioritize comprehensive energy justice initiatives, particularly in marginalized and energy-deprived regions. This includes expanding investment in renewable energy infrastructure, strengthening governance frameworks, and fostering international cooperation to reduce regional disparities. By addressing the injustices embedded in current energy systems, countries can accelerate progress toward a more sustainable, inclusive, and resilient global future.

Acknowledgment

Special thanks and appreciation to the Faculty of World Studies and the staff of the *Journal of Countries Studies* who made it possible to publish the findings of this research.

Conflict of interest

The author declared no conflicts of interest.

Ethical considerations

The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc. This article was not authored by artificial intelligence.

Data availability

The dataset generated and analyzed during the current study is available from the author on reasonable request.

References

Aliakbari R, Safdaripour A, Kowsari E, Gheibi M. (2025). "Energy justice within low-carbon circular economy; geostatistical analysis; policymaking; and economical nexuses". *Journal of Cleaner Production*. 495. https://doi.org/10.1016/j.jclepro.2025.144940.

Billaud O, Soubeyrand M, Luque S, Lenormand M. (2020). "Comprehensive decision-strategy space exploration for efficient territorial planning strategies". *Computers, Environment and Systems*. 83. https://doi.org/10.1016/j.compenvurbsys.2020.101516.

Bojarajan A, Omari S, Alshamsi D, Sherif M, Kabeer S, Sangaraju S. (2024). "A holistic overview of sustainable energy technologies and thermal management in UAE: the path to net zero emissions". *International Journal of Thermofluids*. 23. https://doi.org/10.1016/j.ijft.2024.100758.

Boretti A, Castelletto S. (2022). "Opportunities of renewable energy supply to NEOM city". *Renewable Energy Focus*. 40: 67-81. https://doi.org/10.1016/j.ref.2022.01.002.

Ciplet D. (2021). "From energy privilege to energy justice: A framework for embedded sustainable development". *Energy Research & Social Science*. 75. https://doi.org/10.1016/j.erss.2021.101996.

IEA: International Energy Agency. (2023). *World Energy Outlook 2023*. https://www.iea.org/reports/world-energy-outlook-2023. (Accessed on: 03.06.2025)

Jenkins K, McCauley D, Heffron R, Stephan H, Rehner R. (2016). "Energy justice: A conceptual review". *Energy Research & Social Science*. 11: 174-182. https://doi.org/10.1016/j.erss.2015.10.004.

Joas F, Pahle M, Flachsland C, Joas A. (2016). "Which goals are driving the Energiewende? Making sense of the German Energy Transformation". *Energy Policy*. 95: 42-51. https://doi.org/10.1016/j.enpol.2016.04.003.

Mansson A. (2014). "Energy, conflict and war: Towards a conceptual framework". *Energy Research & Social Science*. 4: 106- 116, doi: https://doi.org/10.1016/j.erss.2014.10.004.

Naseer MM, Hunjra AI, Palma A, Bagh T. (2025). "Sustainable development goals and environmental performance: Exploring the contribution of governance, energy, and growth". *Research in International Business and Finance*. 73 (Part B), 102646, doi: https://doi.org/10.1016/j.ribaf.2024.102646.

PSE Healthy Energy. https://lci.ca.gov/climate/carbon-neutrality.html#:~:text=SB%20100%20(De%20Leon%2C%202018,serve%20state%20agencies%2C%20by%202045. (Accessed on 24.04.2025)

Radder L, Louw L. (1998). "The SPACE matrix: A tool for calibrating competition". *Long Range Planning*. 31(4): 549- 559. https://doi.org/10.1016/S0024-6301(98)80048-4.

Rasekhi S, Ghanbartabar S. (2024). "Energy security and the hypothesis of decoupling: A case study of Russia-Ukraine war". *Journal of Countries Studies*. 2(1): 91-115. https://doi.org/10.22059/jcountst.2023.367548.1073. [in Persian]

Rasoulinezhad E, Halil Eksi I. (2024). "The economic development of the Russian Federation". *Journal of Countries Studies*. 2(2): 279-298.

https://doi.org/10.22059/jcountst.2024.370813.1097. [in Persian]

Skare M, Qian Y, Xu Z, Gou X. (2024). "Energy justice and gaps in sustainable development: A convergence testing and clustering study". *Renewable and Sustainable Energy Reviews*. 192. https://doi.org/10.1016/j.rser.2023.114166.

Song C, Zhao C, Liu Z, Ma X, Yuan Y, Han X. (2024). "Unveiling energy transition strategy: A deep dive into China's ambitious renewable energy policy and its impact on carbon emission dynamics". *Journal of Cleaner Production.* 475. https://doi.org/10.1016/j.jclepro.2024.143684.

Sovacool BK, Dworkin MH. (2015). "Energy justice: Conceptual insights and practical applications". *Applied Energy*. 142: 435-444. https://doi.org/10.1016/j.apenergy.2015.01.002.

Zhang C, Shao D, Yang J, Liu X. (2025). "A multifractal method based on Spacematrix type units for analysing cross-scale characteristics of urban morphology". *Frontiers of Architectural Research*. 14(4): 1132-1145. https://doi.org/10.1016/j.foar.2024.09.003.