International Journal of SDG's Prospects and Breakthroughs, Volume 2, Issue 2, 2024
ISSN-3107-5320

Gender-Inclusive Energy Transitions: Empowering Women in Renewable Energy Sectors

[1] Dr. Iqbal Hussain, Sustainable Livelihoods and Employment Centre, Jamia Millia Islamia, New Delhi, India.

[2] Dr. Ayesha Qureshi, Sustainable Livelihoods and Employment Centre, Jamia Millia Islamia, New Delhi, India.

Abstract: This research investigates gender participation in the acceleration of the transitions to renewable energy and the effects of women empowerment on the innovation and sustainability of the industry. It employed mixed methods to analyze the participation rate, existing barriers, and inclusivity policy frameworks at the sectoral level. The results show that the success of energy results is increasingly higher with the implementation of gender-inclusive practices. This research participates in the debate by offering inclusive policies and approaches to the renewals energy industry geared towards gender equity.

Keywords: Gender Inclusivity; Renewable Energy; Energy Transition; Women Empowerment; Sustainable Development; Energy Equity; Policy Integration; Green Jobs.

(Submitted: March 06, 2024; Revised: April 12, 2024; Accepted: May 22, 2024; Published: June 28, 2024)

I. Introduction

Despite the rapid growth of the renewable energy sector in addressing climate change and energy insecurity. Women, constituting almost 50 percent of the population, remain significantly underrepresented in the energy industry both at the operational and leadership levels. This participation gap is a challenge of equity at best, but it has been well documented that gender-diverse teams achieve superior problem-solving. Women's underrepresentation in the energy sector is largely due to traditional energy policies that have historically neglected the role of gender, considering inequality issues as secondary to technical or economic concerns. Subsequently, more gender-sensitive policies are emerging, focusing on innovation and international standards, exemplified by the UN Sustainable Development Goals (SDG 5 and SDG 7) aimed at fostering gender equality and affordable, clean energy access universally.

The merging of gender and energy studies has received greater attention from scholars and policy practitioners, particularly as it underlines the fact that the shifts toward sustainable energy need to resolve the barriers women face. Barriers such as inadequate technical and financial education, as well as the absence of leadership roles. Moreover, the majority of women in rural areas are energy impoverished and spend excessive amounts of time performing manual work owing to the absence of electricity. The decentralization and diversification of energy systems, especially with the advent of renewables such as solar, wind, and bioenergy, creates an opportunity to incorporate gender equity into the energy systems from the onset.

This paper investigates how gender-targeted policies tied to the transitions to renewable energy could advance socioeconomic outcomes in other areas. We concentrate on Southeast Asia and Sub-Saharan Africa because of the abundant resources for renewables and the glaring gender gaps. Using case studies, industry reports, and other scholarly documents, we examine both the barriers and facilitators to women's participation. The research seeks to document emerging lessons and to offer strategies to postulated gender advocates in policy, education, and workforce development.

II. Review of Literature

An energy transition discourse considers gender as a largely neglected aspect. Clancy et al. (2019) argue that inclusive community energy projects tend to be more widely accepted and implemented, while Mohideen and Kolantharaj (2024) show that integrating gender mainstreaming into project management

frameworks increases the sustainability of renewable energy projects. Carroll (2022) further highlights that gender mainstreaming in the European Union's energy transition enhances inclusivity and strengthens governance outcomes.

In Southeast Asia, networks such as Women in Renewable Energy (WIRE) demonstrate that mentorship and targeted training contribute to the advancement and retention of women in the sector. Similar initiatives exist in Sub-Saharan Africa; for example, Schneider et al. (2022) show that women-led strategies have improved participation in Bangladesh's renewable sector, while Anjanappa and Samant (2024) document how India's clean energy transition still struggles with inclusivity. Despite these advances, women continue to face structural barriers such as cultural attitudes, insufficient childcare, and limited access to capital for women entrepreneurs in clean energy.

Beyond participation, Shankar (2023) emphasizes the need for women's leadership in energy policy and governance, arguing that leadership roles strengthen representation and support inclusive decision-making. Collectively, these works underline the necessity of gender-responsive frameworks and monitoring tools that ensure equitable benefit distribution.

Regardless of these advancements, the body of literature continues to call for deeper analysis of intersectionality. Dynamics of exclusion—class, ethnicity, and geography—intersect with gender, exacerbating inequities. In this regard, Clancy et al. (2019) and Mohideen and Kolantharaj (2024) highlight participatory action research (PAR) and gender impact assessments as useful strategies to evaluate and address these gaps.

III. Methodology

This study employs a combination of approaches that include desk research, statistical evaluation, and case study analysis. Between 2019 and 2024, secondary data was obtained from scholarly journals, reports in the energy sector, and publications from Non-Governmental Organizations (NGOs). To assess the extent of gender policy integration, content analysis of 30 energy policies issued in Southeast Asia and Sub-Saharan Africa was done.

The case study section narrowed down to examine two projects in Kenya and the other two in the Philippines. The criteria for selection included the type of engagement at the project level, scope, funding arrangement, and community participation. Women's professional associations, policymakers, and other stakeholders were invited to participate, which made a total of 24 respondents. The interviews were analyzed using thematic coding which was supported by NVivo.

Data on employment, underemployment, and even leadership positions have been quantitatively analyzed from IRENA, World Bank, national, and other statistical bodies. For gender sensitivity, an integration index for the assessed works was created that sizes the projects from 0, no gender integration, to 5, total responsiveness towards gender. The analysis was comparative in nature to find relationships of gender score index to creation of employment opportunities, reliability of energy, and satisfaction of users.

Emphasis on the methodology provided highlights the relative context of the situation and stakeholders. With the use of qualitative and quantitative methods from different sources, the study relates cross-validate the data with the aim to achieve balanced and accurate findings. This study intends to evaluate the discourse on the incorporation of women's roles in renewable energy development and gender relations most effectively.

IV. Result and Discussion

As the analysis indicates, there is a direct correlation between the level of gender integration and the success metrics of the project. Projects with a higher gender integration index achieved better energy balance, employment of women, and positive community trust.

Not only did women employment increase within Projects A and C which integrated gender perspectives, but the satisfaction levels also improved in comparison to other projects. These results are consistent with the studies reviewed earlier that highlight the importance of inclusiveness towards achieving sustainability.

Table 1: Gender Integration Index and Project Performance

Project	Country	Gender Index Score (0-5)	Female Employment (%)	Community Satisfaction (%)
Project A	Kenya	4.5	48%	87%
Project B	Kenya	2.0	21%	63%
Project C	Philippines	4.0	44%	85%
Project D	Philippines	1.5	18%	58%

Table 2: Comparison of Policy Impact on Gender Equity

Country	Gender-Specific Policies	Women in Leadership (%)	Gender Wage Gap (%)
Kenya	Yes	36%	15%
Philippines	Yes	33%	18%
Nigeria	No	21%	28%
Cambodia	No	19%	30%

The existence of policies pertaining to gender accompanies better performance in the discrepancy of leadership positions in the wage inequality gap. Countries like Kenya and the Philippines that have integrated gender into energy policies tend to perform better than countries that do not have such frameworks.

V. Conclusion

The approaches to renewable energy transitions which are gender-informed consider social equity, economic balance, and environmental impact. Enhancing women's involvement in the renewable energy sector will fortify innovation, social responsibility, and sustainability within the industry. This research demonstrates that community-driven gender-responsive policies yield meaningful results within the context of strong existing policies. Future studies should examine the role of digital technologies and local partnerships in fostering global inclusion.

References

[1] Clancy, J., Barnett, A., Cecelski, E., Pachauri, S., Dutta, S., Oparaocha, S., & Kooijman, A. (2019). Gender in the transition to sustainable energy for all: From evidence to inclusive policies.

[2] Carroll, P. (2022). Gender mainstreaming the European union energy transition. *Energies*, *15*(21), 8087.

[3] Mohideen, R., & Kolantharaj, J. (2024). Managing gender-inclusive, just energy transitions in South Asia. *Oxford Open Energy*, *3*, oiae006.

[4] Shankar, A. (2023). Gender, Energy, and the Advancement of Women in Leadership. In *Transforming Unequal Gender Relations in India and Beyond: An Intersectional Perspective on Challenges and Opportunities* (pp. 135-147). Singapore: Springer Nature Singapore.

[5] Schneider, K., Barman, S., & Nahar, B. S. (2022). Study on women engagement in green energy transition in Bangladesh.

[6] Anjanappa, J., & Samant, S. (2024). How Inclusive is the Clean Energy Transition in India?. *Available at SSRN 4779657*.