

Task Force 02

SUSTAINABLE CLIMATE ACTION AND INCLUSIVE JUST ENERGY TRANSITIONS

Just Energy Transition: Gender Equality and Empowerment

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Abstract

Delay in clean energy transition has a unique impact on women's lives in developing countries. Women and small children are more affected by air pollution from cooking and heating using dirty fuels. Effective, gender-responsive strategies are needed to promote energy transition and ensure women's health and energy security. Households are a major source of GHG emissions (exceeding electricity and transport). Indoor air pollution has a long-lasting negative impact on health, disproportionately affecting women and small children. The unavailability of clean and modern fuel for heating and cooking, which are perceived as women's work in many households, is hazardous to their health as well as reducing the well-being of all household members. In many households, women and children are also responsible for fuel collection, which leads to their exposure to violence and reduces their time for leisure and productive activities. Empowerment of women and girls contributes to clean fuel for heating and cooking; green jobs and entrepreneurship and resilience to climate change. Gender dynamics significantly shape energy access, consumption, production, and decision-making processes. As the world grapples with energy transition and climate change challenges, the multifaceted nexus between gender, energy, and the environment has emerged as the key to finding a solution. In other words, it is becoming increasingly evident that gender equality impacts the distribution of benefits from energy innovations and is a condition of just and sustainable energy transition.

Diagnosis of the Issue: Gender Inequality In The Energy Transition

The intersection of gender and energy, including the environmental problems caused by energy use, is a critical but underexplored area of research that has immense implications for achieving social equity and environmental sustainability. Gender dynamics significantly influence energy access (Kapsalyamova et al 2021; Azhgaliyeva et al. 2021), consumption, production, and decision-making processes. As the world strives to address the challenges of energy transition and climate change, understanding the multifaceted relationship between gender, energy, and the environment becomes crucial.

For women, solid fuel presents additional challenges. In many societies, due to traditional gender roles, women and girls are often responsible for gathering and managing household energy, meaning they must spend significant time and effort collecting solid fuels. This not only limits their opportunities for education and economic activities but may also expose them to health risks from using unclean fuels. Therefore, strategies to address energy poverty need to pay special attention to women's needs and rights, including improving their access to energy, reducing dependence on polluting fuels, and ensuring their voice in energy decision-making processes.

Women are more affected by delay in clean energy transition particularly by a lack of access to clean cooking and heating. Women benefit more from clean cooking and heating, thus they can drive clean energy transition if empowered. However their ability to switch to clean cooking and heating could be limited especially in developing countries. The global energy transition, while crucial for combating climate change,

presents a complex challenge when considering its impact on gender equality. Several key issues highlight this disparity (summarized in Figure 1):

Disproportionate Burden of Unsustainable Energy: Women and children in low- and middle-income countries are disproportionately impacted by household emissions and indoor air pollution due to reliance on traditional cooking and heating methods (Sedai et. al., 2021; Sedai et.al., 2022). This results in significant health risks, particularly respiratory illnesses, impacting women and children the most, as they often manage cooking and heating duties. “Additionally, indoor cooking during heatwaves can intensify health risks due to heat and pollution” (Woods 2023).

Limited Access to Clean Energy Solutions: Lack of access to clean cooking and heating solutions, such as efficient cookstoves and renewable energy sources, further exacerbates the health burden on women and children (Su and Azam, 2023). Limited access to clean energy solutions burdens women disproportionately reducing their access to employment. This is often compounded by limited financial resources and lack of awareness about clean energy options.

Underrepresentation in the Energy Sector: The energy sector remains largely male-dominated, with women significantly underrepresented in leadership, technical, and decision-making roles. This limits the inclusion of diverse perspectives and hinders the development of clean energy solutions that address specific needs faced by women and vulnerable communities. Traditionally fossil fuel was man dominated due to hard physical work especially in the mining. Clean energy brings opportunities for women, thus energy could become more gender balanced.

Lack of Gender-Inclusive Policies: Policy frameworks related to energy often fail to adequately consider the needs and priorities of women. This lack of gender-sensitive

approaches leads to missed opportunities for empowering women in the energy sector and ensuring their equal participation in the benefits of the energy transition.

Impact on Women's Livelihoods and Empowerment: The lack of access to clean energy and limited opportunities for employment for women who are engaged in time consuming fuel collection, as well as cooking and heating using solid fuel restricts women's economic opportunities and hinders their overall empowerment. This can perpetuate existing gender inequalities and limit progress towards broader sustainable development goals.

At the same time women, especially unemployed often have limited ability to switch to cleaner energy due to limited access to finance.

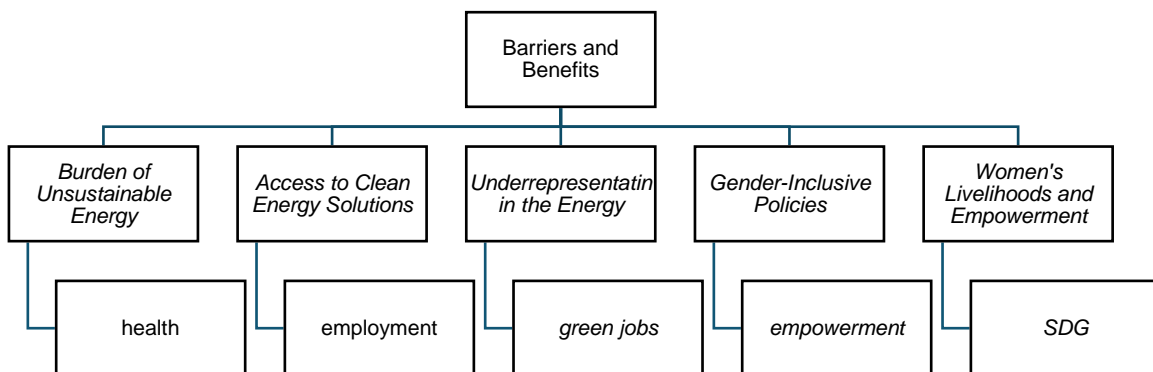


FIGURE 1. Barriers and benefits of clean energy solutions for women

Source: Authors' own

Recommendations

To address the challenges and harness the opportunities presented by the energy transition, several key recommendations can be implemented:

1. Ensuring access to clean cooking and heating solutions

Targeted Subsidies and Incentives: Governments can implement targeted subsidies and tax breaks for clean cookstoves and energy-efficient heating systems, particularly in low-income and rural areas. This incentivizes the adoption of clean energy solutions and alleviates the financial burden on vulnerable households.

Public-Private Partnerships: Partnerships between governments, private companies, and NGOs can drive innovation and facilitate the development and distribution of affordable, culturally appropriate clean cookstoves that address local needs and cooking practices. Also, Technology Needs Assessment (TNA)¹ and Technology Action Plans (TAPs)² are very important for countries to have access to funding sustainable solution projects.

¹ TNA provides a comprehensive assessment of technology needs for the clean cooking and heating options (Ministry of Science, Technology and Innovations and UNEP 2021).

² TAP “consists of an action plan that can address technological, training or diffusion matters, among others, and which translates into concrete actions to be implemented for the development and/or diffusion of technologies in the prioritized sectors The actions, in turn, are divided into activities and should indicate the necessary resources for their implementation, including schedules, cost estimates and potential stakeholders

Awareness Campaigns and Education: National and local awareness campaigns can be launched to educate women, the primary users of cookstoves, and the wider community about the health risks of indoor air pollution and the benefits of clean energy solutions. Awareness about user harm – health risks – have a stronger impact than environmental risks (Azhgaliyeva et al. 2023).

2. Ensuring access to finance for clean cooking and heating

Women often willing to switch to cleaner energy, but lack access to finance, which is necessary due to upfront cost for the switch. Subsidized loans, guarantees and other policy instruments improving access to finance are needed with a target for women especially with small children.

3. Empowering women through clean energy entrepreneurship

Skills Development and Training Programs: Establish training programs specifically designed for women to develop the skills and knowledge needed to start and manage businesses related to clean energy distribution, installation, and maintenance.

Supporting Women-Led Clean Energy Initiatives: Provide funding and support to women-led cooperatives and social enterprises focused on delivering clean energy solutions within their communities. This fosters local ownership and empowers women to contribute to creating sustainable energy access.

to mobilize throughout the process (Ministry of Science, Technology and Innovations and UNEP 2021: p.25).

Microloans and Financial Resources: Facilitate access to microloans, grants, and other financial resources specifically for women entrepreneurs to overcome initial investment hurdles and establish clean energy businesses (Sedai et. Al., 2021). This allows women to participate actively in the clean energy sector and gain economic independence.

4. Fostering gender equality in the energy workforce

Gender-Inclusive Workplace Policies: Implement and enforce policies that promote equal opportunities for women in recruitment, training, and career advancement across all levels of the energy sector. This includes addressing unconscious bias, promoting equal pay, and providing opportunities for professional development.

STEM Education and Scholarships: Partner with educational institutions to develop targeted programs and scholarships encouraging women to pursue STEM fields related to energy. This helps create a diverse and qualified talent pool within the energy industry (Kahn and Ginther, 2017).

Mentorship and Networking Programs: Provide mentorship and networking opportunities for women working in the energy sector. This connects them with experienced professionals and creates a supportive network to foster their career development.

5. Integrating gender considerations into energy policies

Gender Mainstreaming: Conduct gender analyses and integrate gender considerations into all energy-related policies, programs, and projects. This ensures that the specific needs and perspectives of women are considered when developing and implementing energy solutions.

Gender-Disaggregated Data Collection: Regularly collect and analyze data on energy access, consumption, and decision-making processes, disaggregated by gender. This data is crucial for understanding existing inequalities and informing the development of targeted interventions.

Gender Champions and Focal Points: Establish dedicated gender champions and focal points within government agencies and energy companies to promote gender equality within the energy sector and advocate for the needs of women.

Scenario of Outcomes: Prioritizing Gender Equality in the Energy Transition

The global energy transition presents a unique opportunity to address both environmental sustainability and gender inequality. By prioritizing the needs and challenges faced by women and vulnerable groups, we can create a just and sustainable future for all.

One major concern is the disproportionate impact of household emissions and indoor air pollution on women and children. These issues are often exacerbated by the lack of access to clean cooking and heating solutions in low-income and rural areas. To address this, governments can implement large-scale clean cooking and heating programs. This could involve providing targeted subsidies and tax breaks for purchasing energy-efficient stoves and heaters alongside partnering with private companies and NGOs to develop and distribute affordable, clean cookstoves suited to local needs. Additionally, national awareness campaigns could be launched to educate women about the health risks and the benefits of adopting clean energy solutions.

Beyond health concerns, empowering women through clean energy entrepreneurship is crucial for driving positive change. Women often manage household energy resources, making their involvement in the clean energy sector pivotal. Governments and international organizations can empower women as agents of change by establishing training programs and funding opportunities specifically designed for them to start and manage clean energy distribution, installation, and maintenance businesses. Supporting women-led cooperatives and social enterprises focused on providing clean energy solutions within their communities would further incentivize their participation. Additionally, facilitating access to microloans and other financial resources can help

women entrepreneurs overcome the initial investment hurdles associated with starting clean energy businesses.

Finally, ensuring equal opportunity and representation for women throughout the energy sector is vital for a just and sustainable energy transition. Governments and energy companies can work together to achieve this by implementing and enforcing policies promoting gender equality in recruitment, training, and career advancement across all sectors of the industry. Partnering with educational institutions to develop targeted programs and scholarships encouraging women to pursue STEM fields related to energy can also create a more diverse and inclusive talent pool. Additionally, providing mentorship and networking opportunities for women working in the energy sector can support their professional development and connect them with other professionals in the field.

By focusing on these key policy areas, we can foster a future where the energy transition not only benefits the environment, but also empowers women, promotes gender equality, and contributes to the well-being of all individuals and communities.

References

- Azhgaliyeva, D., Mishra, R., Karymshakov, K., Kerimray, A., & Kapsalyamova, Z. (2021). What determines coal consumption for residential heating in Kazakhstan and the Kyrgyz Republic? *Australasian Journal of Environmental Management*, 28(4), 410–432. <https://doi.org/10.1080/14486563.2021.1989328>
- Azhgaliyeva, D., W. Kodama, and H. Holz hacker. (2023). Does Environment and Health Awareness Matter for Household Fuel Choice? Empirical Evidence from Central Asia. ADBI Working Paper 1425. Tokyo: Asian Development Bank Institute. Available: <https://doi.org/10.56506/VUWZ8321>
- Kahn, S., & Ginther, D. (2017). Women and STEM (No. w23525). National Bureau of Economic Research.
- Kapsalyamova, Z., R. Mishra, A. Kerimray, K. Karymshakov, D. Azhgaliyeva (2021) Why energy access is not enough for choosing clean cooking fuels? Evidence from the multinomial logit model, *Journal of Environmental Management*, Volume 290, <https://doi.org/10.1016/j.jenvman.2021.112539>
- Sedai, A. K., Nepal, R., & Jamasb, T. (2022). Electrification and socio-economic empowerment of women in India. *The Energy Journal*, 43(2), 215-238.
- Sedai, A. K., Vasudevan, R., & Pena, A. A. (2021). Friends and benefits? Endogenous rotating savings and credit associations as alternative for women’s empowerment in India. *World Development*, 145, 105515.
- Sedai, A. K., Vasudevan, R., Pena, A. A., & Miller, R. (2021). Does reliable electrification reduce gender differences? Evidence from India. *Journal of Economic Behavior & Organization*, 185, 580-601.

Su, Q., & Azam, M. (2023). Does access to liquefied petroleum gas (LPG) reduce the household burden of women? Evidence from India. *Energy Economics*, 119, 106529.

Woods, Z. (2023) How to Address the Impact of Climate Change-Driven Extreme Heat on Women's Lives, Asian Development Blog, <https://blogs.adb.org/blog/how-address-impact-climate-change-driven-extreme-heat-women-s-lives>



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