POLICY BRIEF


Photo: TERI Lighting a Billion Lives program

Opportunities and Constraints for Women's Employment and Entrepreneurship in Renewable Energy.

As countries around the world transition to low-carbon renewable energy supplies, new employment opportunities are being created. Women can gain optimal traction from employment in the renewable energy sector only if there are wider socially progressive policies in place.

WHAT'S AT STAKE?

Concerns about climate change and fossil fuel insecurity have convinced countries around the world to transition to low-carbon energy supplies derived from renewables such as solar, bioenergy, geothermal, and wind. Since producing and distributing renewables is more labor-intensive than producing and distributing fossil fuels, this shift is addressing energy poverty in remote or under-served communities and creating new employment opportunities.

KEY RESULTS

- The high price of renewable technologies and the lack of adequate and appropriate financing is the biggest impediment for their dissemination.
- Solar lanterns have gained popularity in low-income households in India at a much faster rate than improved cookstoves.
- The intra-household gendered power hierarchy ensures that commercial investment in energy-efficient cooking technologies remains low compared to investment in solar lighting.
- Even well-intentioned renewable energy interventions can fail to level the playing field for the poorest women.
- Women are more likely to pursue employment opportunities if they can earn incomes without becoming indebted.

Applying a gender lens to the enthusiasm for renewables, however, reveals a major problem since women are underrepresented globally in employment in the fossil-fuel based and renewable energy sector. In the absence of appropriately targeted training, education, apprenticeships, employment placement, financial tools and supportive social policies, transitioning to renewables may exacerbate existing gender inequities and hinder human development goals.

To study the opportunities and constraints low-income women in India face in accessing technologies and employment in renewable energy, researcher Bipasha Baruah (University of Western Ontario) evaluated the impact of two initiatives enabling poor rural and urban households in India to become users of renewable energy technologies.

This brief presents some of the findings of the evaluation of these programs, with an aim to inform policymakers in India and other countries on ways to enhance women's access to renewable energy technologies and employment outcomes.

RESEARCH APPROACH

Two organizations participated in the research: The Energy and Resources Institute (TERI), India's leading think-tank on sustainable energy, and the Self-Employed Women's Association (SEWA), a trade union organizing low-income women for better working conditions and social security provisions. The initiatives analyzed in this study are 1) TERI's Lighting a Billion Lives (LaBL) program, which introduced solar lighting in 640 rural communities across India, and 2) SEWA's Hariyali Green Energy project, which distributes energy-efficient stoves and solar lanterns to its members in various urban and rural locations in India.

To assess the impact of these initiatives, statistical data on access to renewable technologies and employment was combined with ethnographic data collected through interviews and focus groups with LaBL and Hariyali project stakeholders.

KEY FINDINGS

The LaBL and Hariyali projects have enabled a significant number of poor rural and urban households to become users of renewable energy technologies. The findings from this study indicate that although there are economic, social, health and environmental benefits of using solar lanterns and improved cookstoves, there are also persistent obstacles to the widespread diffusion of such technologies into poor households in India.

The high price of renewable technologies and the lack of adequate and appropriate financing is the biggest impediment for their dissemination.

The cost of outright purchase of these technologies is often prohibitive. SEWA's microcredit repayment scheme is designed to be accessible for low-income customers but may still be unaffordable for many households. Through its Corporate Social Responsibility (CSR) partnerships, TERI can access private sector funding to ensure that a potential entrepreneur does not need to assume any of the significant initial costs (of about USD $3,250) of setting up a solar charging station of 50 solar lanterns. This fee-for-service daily rental model used by LaBL to disseminate solar lanterns is very affordable for most households but has its own limitations since renting households will over time probably become interested in purchasing the lanterns instead of continuing to rent them.

Solar lanterns have gained popularity in low-income households in India at a much faster rate than improved cookstoves.

There are several reasons for this. Since kerosene and other fuel for lighting is expensive, the men in the households, who are more often responsible for making purchasing decisions, may more easily appreciate the economic benefits to the family of acquiring solar lanterns. They are far less likely to appreciate the benefits of purchasing an improved cookstove, especially since they are usually not responsible for cooking or for gathering firewood. The perception that the traditional three-stone stove is "free" whereas the improved cookstove must be purchased or financed - at what for many families is a large chunk of their monthly income - is the most widely reported barrier for its adoption. The health benefits and improvements to living conditions are not sufficiently motivating for households that accept such hardships as inevitable.

The intra-household gendered power hierarchy ensures that commercial investment in energy-efficient cooking technologies remains low compared to investment in solar lighting.

In India alone, 1.5 million people die every year from inhaling polluted indoor air, and more than 60 percent of those who die are women and children. Energy-efficient cookstoves can create much bigger improvements in health and living conditions for poor households than solar lanterns can. However, because the end-user of a

cookstove is usually a poor woman, with limited purchasing power and lower social status, the family's lighting needs and the greater economic power of men within the household tend to be prioritized. The Companies Bill, adopted by India in 2012, which requires corporations to spend at least 2 percent of their net profit on CSR activities, could enable wider dissemination of less-profitable clean energy technologies, but it could also just end up promoting technologies that are already popular and profitable.

Even well-intentioned renewable energy interventions can fail to level the playing field for the poorest women.

The two projects included in this research have enabled poor households to become users of renewable energy technologies. They have also created opportunities to earn incomes from selling, renting and repairing solar lanterns and cookstoves. SEWA Bank created specific energy loans to enable its members to become users as well as entrepreneurs of renewable energy technologies.

TERI's LaBL program uses a CSR model to ensure that potential entrepreneurs do not have to assume the costs or risks of setting up charging stations. Despite such efforts, only 32 of LaBL's approximately 640 entrepreneurs across India were women. The few women who do become entrepreneurs tend to be from better-off families. Although the entrepreneur does not have to assume the cost of setting up a charging station, other factors such as poor and inadequate housing prevent the poorest people from becoming entrepreneurs. Setting up a charging station to house 50 lanterns requires a space within the home of at least 200 square feet and a tin roof on which the panels can be installed. The homes of the poorest families in rural and urban communities have neither. Since the poorest households in both urban and rural settings in India also often tend to be female-headed, it is easy to understand why poor women cannot expect to become entrepreneurs.

Photo: SEWA Hariyali Green Energy project

Women are more likely to pursue employment opportunities if they can earn incomes without becoming indebted.

There is growing evidence that microcredit is not an appropriate tool to support the development of small and medium enterprises. Most poor women are interested in renewables because of the potential for income generation, but they are also extremely averse to financial risk. Acquiring new skills - such as learning to build and repair renewable energy technologies - may be better suited for their economic realities and limitations. SEWA is aware of these constraints and offers training in these skills, frequently in collaboration with other NGOs in India. Women are also earning commission-based incomes from activities such as educating people about the health risks of smoke inhalation, creating awareness about the benefits of using renewable energy technologies, conducting energy audits of homes and businesses, and connecting potential customers of green technologies with financing opportunities available through banks and NGOs. Because women are typically responsible for cooking for their families, they do have a comparative advantage in reaching out to other end-users of cookstoves.

POLICY INSIGHTS

As they consider how to empower women in the renewable energy sector, findings suggest that decision-makers and practitioners should consider the following:

The creation of permanent and stable sources of income may remain a challenge for those in the renewable energy sector.

The number of organizations working on renewable energy in India is still quite small, given the size of the country, so there is room for more innovation in this sector for the creation of other opportunities for training, apprenticeship, employment and revenue generation.

We cannot rely solely on the private sector to serve the interests of the poorest women.

More than 500 million people in India live on less than USD $2 per day and the economies of scale that can be generated from catering to the "bottom of the pyramid" are not lost on private sector organizations and social enterprises. However, in the interest of maximizing short-term profits and building a competitive advantage with other commercial players in the energy sector, they will continue to pursue the "low hanging fruit" first. This will ensure that solar lighting will enjoy far higher levels of

investment than cooking technologies, hindering access to technology and employment among poor women with inadequate purchasing power and low social status.

Strong public-sector investment will help ensure the allocation of resources for technology development is determined by the greatest benefit for the common good.

If we wait for the bulk of green investment to come from the private sector, as the global architects of the green economy, including the United Nations Environmental Program, recommend we do, the technologies that can make the biggest differences in the lives of poor people, particularly women, may not be prioritized urgently enough for development and dissemination. There is a clear need for governments to, at the very least, put incentives and subsidy structures in place that direct private investment to areas that would otherwise not be prioritized.

Women can gain optimal traction from green initiatives only if there are wider socially progressive policies in place.

Since women's ability to take advantage of new energy-related employment options is often constrained by legal or social barriers that limit their education, property rights, land tenure, and access to credit, it is crucial that we go beyond energy sector planning to optimize economic opportunities for women. This highlights the need for the state to adopt wider socially progressive policies including robust social welfare infrastructure and quality public services accessible to all.

The energy sector must actively resist the rhetoric of cleaner cooking technologies as "women's needs."

Categorizing goods and services that everyone needs to survive - water and sanitation are other good examples - as women's needs only serves to maintain the sexual division of labor and to reinforce entrenched gender inequalities. The instrumental deployment of women for selling and promoting improved cookstoves reinforces this problematic tendency in the renewable energy sector. There is a material and an ideological basis for gender inequality and we must necessarily challenge both to create transformative differences in women's lives.

This brief was authored by B. Baruah and designed by K. Grantham. It draws on key findings of the working paper, "Opportunities and Constraints for Women's Employment and Entrepreneurship in Renewable Energy."

Suggested Citation:
B. Baruah. 2017. "Opportunities and Constraints for Women's Employment and Entrepreneurship in Renewable Energy." GrOW Research Series Policy Brief. Montreal, Canada: Institute for the Study of International Development, McGill University.

Produced with support from McGill University and the International Development Research Centre (IDRC). The observations and views expressed in this work are the sole responsibility of the author(s).

OUR PARTNERS

SEWA
Self employed women's association

teri
The Energy and Resources Institute

ISID
INSTITUTE FOR THE STUDY OF INTERNATIONAL DEVELOPMENT
INSTITUT D'ÉTUDE DU DÉVELOPPEMENT INTERNATIONAL

McGill UNIVERSITY

UKaid
from the British people

WILLIAM + FLORA Hewlett Foundation

IDRC | CRDI
International Development Research Centre
Centre de recherches pour le développement international

The GrOW Research Series *brings together scholarly research on women's economic empowerment and growth in low-income countries, and provides a conceptual and empirical basis for policy-making. It is also the official research platform for the Growth and Economic Opportunities for Women (GrOW) program. This series is housed at the Institute for the Study of International Development (ISID) at McGill University in Montreal.*

GrOW Research Series
Institute for the Study of International Development Peterson Hall, 3460 McTavish St.
Montreal, Quebec, Canada, H3A0E6
Email: grow.research@mcgill.ca
Twitter: @GrOW_Research
www.grow.research.mcgill.ca