

Clean Energy Transition: An Opportunity to Advance Gender Equality

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1. Energy Transition

Energy transition refers to the shift from fossil-based systems of energy production and consumption — including oil, natural gas and coal — to renewable energy sources like hydro, wind and solar. The increasing penetration of renewable energy into the energy supply mix, the onset of electrification and improvements in energy storage are all key drivers of energy transition. Renewable energy holds numerous opportunities and has enormous power connected to several development outcomes: alleviating a host of prevailing issues that beset us. Renewables

complement all the 17 Sustainable Development Goals (SDGs) including the one relating to **achieving a catalyst for gender equality and empowering women**.

Recognising energy as the principal enabler for development is the SDG 7 which underscores three targets: Universal access to energy, a higher share of renewable energy and massive improvements in energy efficiency as top global priorities for sustainable development by 2030. In traversing this path, the call is also for **energy transition – a transition to low carbon economy**¹.

1 Transition to low-carbon economy as the solution to overcome climate - deemed possible only through dedicated efforts to drastically decrease greenhouse gas (GHG) emissions, and promote renewable energy sources. Paris Agreement on Climate Change aims to limit the global temperature rise to well below 2 degree Celsius, if not to 1.5 degree Celsius. There is a growing consensus among the countries party to the UNFCCC to achieve net zero greenhouse gas emission by 2050 to meet the Paris target.



This paper is an attempt to provide an insight into the current status of gender and energy in Nepal based on the analysis of relevant policy documents and consultations with selected key stakeholders. The paper presents key data, an overview of the institutional set-up focusing on gender and energy, and an analysis of existing barriers and opportunities. This leads to a set of recommendations for ensuring gender considerations in the process of transitioning to clean energy systems, overcoming the barriers and for tapping the available opportunities.

Energy Progress Report (2021). 74.5 % of people are still using traditional energy sources while only 3.5 % uses renewable energy sources. (See Figure 1)

Off-grid renewable energy sources currently provide 9.75 % of the total electricity generated in Nepal. These include 6.25% from solar and 3.5% from micro hydro, off-grid systems such as mini-grids and stand-alone and hybrid solar systems are an essential element in the country’s plans to provide clean energy to all citizens by 2030. In terms of location, share of energy such as hydroelectricity, LPG is more prominent in urban areas 46.4 % as compared to 1.5% in rural areas.

2. Country Perspective

ENERGY USE SCENARIO

About 93% of the households in the country have access to electricity. Nepal’s access to electricity increased at an annual rate of 4.3% which is much higher than the global average of 0.8%, as per the

KEY ENERGY ISSUES: GENDER PERSPECTIVE

The key pertinent issue related with gender and energy is typically linked with the double burden, which includes working in the fields as well as maintaining the household.

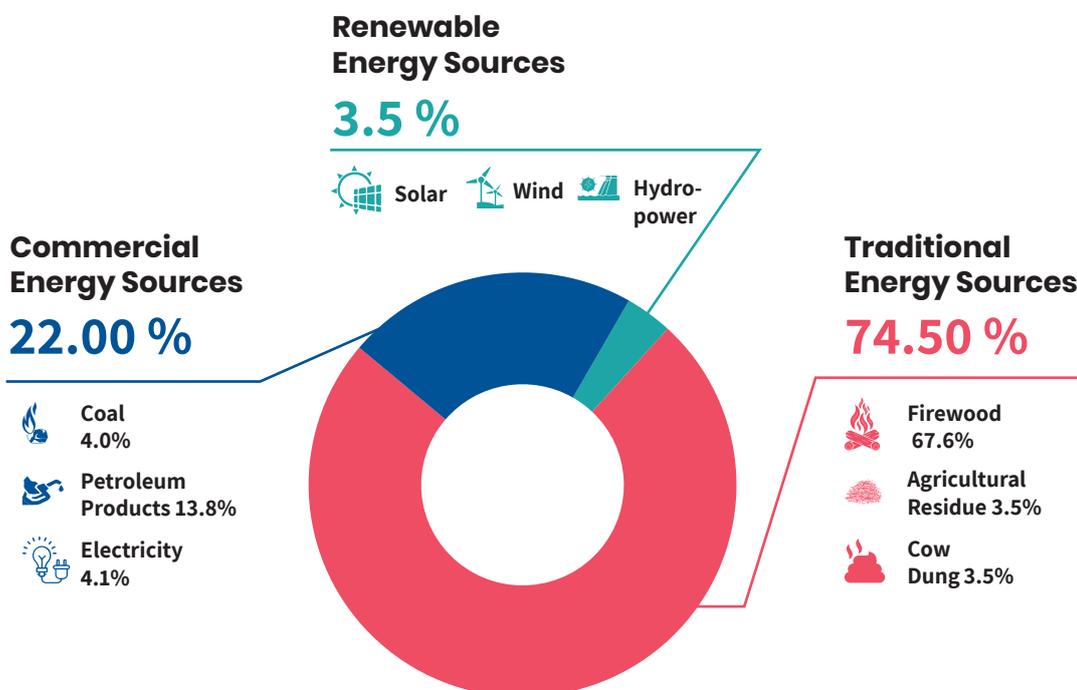


Figure 1: Energy Use in Nepal

Source: <https://nepalindata.com/insight/renewable-energy-usage-in-nepal/>

Domestic Activities

Nearly 68% of the country's population depends on traditional energy sources (firewood, agro-wastes and animal waste) for basic energy needs: cooking and space heating. Collecting firewood is largely the responsibility of women and girls, who are the primary energy producers for the household, especially in the rural areas. According to Adhikari & Jaishi, for fire wood collection in Nepal, 93% of rural women are found to be involved more than men besides taking care of other household activities. They devote about 66% of their lifetime for collecting firewood. The women walk over 20 km per journey, and the time and distance traversed is found to have increased with increasing deforestation. Time spent each day by women on cooking, cleaning, child care and collecting firewood and water is estimated to be 9 to 13 hours. This leaves no time for the women to get engaged in economic and other activities. According to ADB, 2016 - "Women spend many more hours than men on household work, limiting women's productive and social activities, and girls' school attendance". Access to energy services can also unleash a process of women's empowerment, bringing about changes in gender relations. Access to energy significantly



impacts women's lives: it reduces the time spent on household tasks, helps improve their health and increase access to information services such as television, radio and the Internet.

World Health Organisation (WHO) notes that household air pollution is responsible for premature deaths every year, with the victims being mostly women and children under the age of five. This is linked to smoke from use of firewood, animal waste and charcoal. As rural areas in Nepal heavily rely on solid biomass and coal for cooking, this phenomenon is just as critical. Household air pollution of this kind was the third largest contributor to respiratory diseases in the country that caused about 22,000 premature deaths in 2015 (WHO, 2015). Meanwhile, women and girls are also reported to have faced high risks for sexual abuse and harassment while collecting firewood and travelling to the forests. As the women need to carry heavy loads of firewood, charcoal, etc., among other things, many of them suffer from musculoskeletal damage and uterine prolapse.

Economic Activities

Agriculture remains the primary occupation with about three-quarters of the population engaged in it. The role of women in the sector is even crucial given that over 80% of women are employed in the sector (FAO, 2019) with a majority of them mainly working as subsistence agricultural producers. Due to job-related out-migration of rural men, there is also a shift in the traditional division of labour with many women taking up additional responsibilities such as ploughing and marketing.

Meanwhile, entrepreneurship, traditionally seen as a male preserve, has of late witnessed increasing participation of women. As of 2018, women owned 247,880 establishments (29.8 %) of the total establishments in the country. According to the census, the highest number of enterprises owned by women fall under wholesale and retail categories. Accommodation and food service activities come second and manufacturing enterprises third in terms of women's ownership.

| | Total Staff | Male % | Female % | Women Staff (STEM) % | |
|--|---|-----------------------------|-----------------------------|----------------------------|--------------------------|
| Alternative Energy Promotion Centre (AEPC) ¹ | 91 | 64 | 36 | 6.5 | |
| | <i>No representation of women as per the national standards in decision making positions, managerial positions in AEPC, Project (NRREP) components, subcomponent and units as well. Inclusiveness at assistant and support level staffs in central office</i> | | | | |
| | Technical Staff Male | Technical Staff Female | Non-Technical Staff Male | Non-Technical Staff Female | |
| Nepal Electricity Authority (NEA) ² | 58% | 6% | 27% | 9% | |
| | <ul style="list-style-type: none"> • High numbers female staff in administration or work as support/ housekeeping staff (cleaning/ making and serving tea): largely are engaged at counter/ cash/ ledger jobs, 5-10% as meter readers. • Women engineers mainly in Kathmandu, very few stationed in field locations. • Very few women at senior management; small percentages of women are at mid- and lower levels of professionals. • No women in the board | | | | |
| Public Private Partnership (PPP) ³ (Sampled 20 Companies) | Female Employees | Women in Executive Position | Women in Technical Position | Board Members | Companies owned by Women |
| | 10% | 8% | 5% | 9 | 5 |

Source:

1. Koirala, U. (2014). Gender Equality and Social Inclusion Audit in AEPC/NRREP, AEPC
2. Dutta & Shakhya, 2019
3. IFC, 2020

Engagement of women in the Energy Sector

Within the energy sector, gender inequality is perhaps more pronounced than many other sectors of the economy. In the power sector, specifically in generation, transmission, and distribution companies, women are poorly represented. In case of Nepal, this figure stands at less than 10 percent (Shakya, 2018). Very few studies have been carried out on the role of women within the sector. According to Koirala, 2014 within Alternative Energy Promotion Centre (AEPC), only 18 percent of the staff are female. The same study highlights that “No representation of women and excluded groups is found as per the national standards in decision making positions,

managerial positions in AEPC, National Rural and Renewable Energy Programme (NRREP) components, subcomponent and units as well. However, there is inclusiveness at assistant and support level staffs in central office”.

The low participation of women in the energy sector curtails women’s rights. Effective energy transition – and the deep societal transformations they entail – require the best available talent and the most diverse workforce possible. The current composition of the workforce excludes valuable female viewpoints, experiences, and skills ignoring the gender-energy transition nexus.

Decision Making: Governance

Overall, the country has seen some good progress in women’s representation in socio-political sector, although tokenism dominates the rule of the game. However, the energy sector remains heavily male-dominated. So far, this sector has seen two women Ministers and one Managing Director in NEA. Integration of gender and energy aspects yet remains unaddressed in policies and programmes.

Despite some initiatives to form various working committees with women’s representation at the local level such as GIZ’s initiative to set up energy sub committees, much remains to be done to ensure “meaningful participation” of the women in decision making in the working committees and sub-committees. Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) conducted for Renewable Energy for Rural Areas (SWN, 2019) and the Green Inclusive Energy Projects show a low level of understanding of energy issues among the members has led to failure to integrate gender aspects in energy projects and programs. Although most of the municipalities have separate set of activities on Gender Equality and Social Inclusion (GESI) under the social development heading, their energy plans are GESI neutral (Practical Action, 2020).

Decision Making: Domestic and Enterprise Scenario

Decision-making is often shared between men and women, in both male- and female-headed households, but household budgets are mostly controlled by men. Small scale daily expenditures are decided by women alone, whereas big economic activities such as purchasing land and house or starting businesses are decided by men clearly indicating the gender bias in economic decision making (MSSRF & CRTN, 2019). This has led to the existence of only a small number of women-led enterprises in the country. Even these enterprises and mostly labour intensive and fraught with numerous challenges, including those related to energy and energy-based technologies.

There are some energy-based enterprises led by women such as cooking. This need modern energy and can be supported within clean cooking energy programmes or through women's entrepreneurship programmes. Women need decision making power to run the business they want along with the provision of use of modern energy in their businesses including provision of information, information of financing mechanisms, investment in energy infrastructure, and targeted subsidies.

Key Barriers related to Gender-just Energy Transition

Women continue to face barriers to leading, participating in and benefiting from energy transition at all individual, household, community, and institutional and policy levels.

Gender-disaggregated data on the energy sector are very limited. There is no specific legislation for the production of gendered statistics. However, AEPC has made efforts to promote coordination through its information unit and it’s implementing partners to maintain gender statistics from renewable energy sector. Limited gender disaggregated data is also available from Central Bureau of Statistics. Similarly, the Department of Health also maintains gender disaggregated data (also report on energy uses). There is a need for new data that estimates the differentiated energy needs of both rural and urban males and females at individual and household level including for income generation and sustainable impacts. The lack of gender-disaggregated data on household energy use and health impacts impedes the development of policies to promote clean and safe household energy. As stated in WHO 2016, without data on implications of cooking energy it is difficult to characterize the disparities in health status between and among populations of women and men. Existing energy use by men and women in various activities and future energy needs supports efforts to recognize the need for and design of specific gender-focused interventions (Orlando et al, 2018).

Lack of access to clean energy has disproportional effects on women. The continued use of traditional energy sources will continue resulting in health implications. Excessive time spent on collection of firewood and cooking results in reduced opportunities for women’s market employment and their economic status in households (ENERGIA, 2021 & ESMAP, 2020) . Women hardly get time to participate in any awareness and skill building programs and income generation activities, which reduces their confidence in using new technologies², and ultimately disempowers them.

Household power relations is considered an obstacle to adoption of clean energy systems.

Given that women have less power within households despite them being responsible for most household cooking needs, persisting gender inequality in decision making are major obstacles to adoption of clean cooking because “men fail to appreciate the full benefits of clean cooking fuels”, (ENERGIA, 2021). According to MSSRF and CRTN 2019, although the aspiration for clean cooking stoves persists among women (direct users of stoves), they are not welcoming new technologies basically for the following reasons:

- Lack of information and awareness regarding the technology
- Difficulties in accessing necessary services
- Economic conditions of women
- Dependency on male and senior members of the households
- Reluctance to change practices among senior family members

3. Opportunities for Gender Equality through Transition to Clean Energy

Of late, gender has started finding space in energy related discussions. The need for effective integration of gender dimension is globally recognized for achieving the Sustainable Development Goals (SDGs), in particular SDG 7. Sustainable energy transition can create benefits and opportunities for both women and men. Globally, women are increasingly active in the energy workforce and as entrepreneurs in SMEs, and contributing to economic growth and industrial development. The dialogue on gender and energy has clearly shifted from women being identified as a vulnerable group to them being key agents of change as consumers, producers, innovators, and decision makers across the energy sector.

Table 1: Time that can be saved for housewives on household work with appropriate technologies

| Type of work | Time on Household Work (Average Minutes Per Day) | |
|------------------------------|--|--------------------------------------|
| | Urban | Rural |
| Cooking preparation | 25 | 23 |
| Washing dishes | 28 | 46 |
| Cleaning in and around house | 49 | 77 |
| Washing and ironing clothes | 47 | 107 |
| Total | 149 2 hrs 29 mins | 253 3 hours 13 mins |

Source: Shrestha et al, 2018

2 Focus group discussions and Key informant Information carried out in Kavre, Sindhuli and Banke for the study-Gender Responsive Electric Cooking in Nepal for ENERGIA

Improved access to modern energy is bringing forth multiple impacts in terms of better health outcomes at household level, time saving for income generation and family well-being, etc. It has been found that a higher percentage of children (boys and girls) from households with electricity access were enrolled in schools and spent more hours studying (Shrestha et al, 2018).

Engaging in the renewable energy sector as service providers – marketing, installing and repair – has proven to be an effective means of reaching out to the last mile population (ENERGIA, 2019 & Shakya, 2011). Women can play key role in promoting and implementing new clean technologies. Energy interventions that meet the needs of and involve both women and men increase the likelihood of technologies being adopted and used.

It is a well proven fact that energy in the form of light allows a children to do their homework while street lights provide safety for women to travel home at night (in case of Terai areas of Nepal, it has also helped protect women and men from reptiles and rodents at night).

Undoubtedly, energy is needed across the steps in the agri-food and agri-business chain. Women’s agricultural productivity and incomes can improve

through the adoption of agricultural technologies, such as irrigation technologies that reduce the intensive use of manual energy. Access to energy-based technologies – such as low-cost domestic appliances, power water wells, drip irrigation systems and other labour-saving technologies for agricultural production and post-production activities like grinding and milling, refrigeration, and packaging can go a long way towards enhancing women’s labour productivity and increases the time available for engaging in productive activities outside the household.

Women can play a crucial role in scaling up energy access, especially in hard-to-reach communities. As household energy managers and through their networks, they are uniquely positioned to connect with their peers, increase awareness and deliver energy products and services. Women entrepreneurship is often seen as a journey out of poverty and a march towards equality. In Nepal, they are largely engaged in small and medium sized enterprises. Their engagement in the sector can empower them and over time and transform power relations.

With SDG 7 as the means, the pathway for achieving women’s empowerment and added contribution to other SDGs³ is presented in Figure 2.



Figure 2: Affordable and Clean Energy Impact Pathway in Achieving Gender Equality and Climate Resilience

3 SDG 1: No Poverty, SDG 3: Good Health and Well-being, SDG 4: Quality Education, SDG 6: Clean Water and Sanitation, SDG 8: Decent Work and Economic Growth, SDG 13: Climate Action

4. Recommendations for Strengthening Gender in Energy Transitioning to 100% RE

Based on the prevailing situation assessment of gender in the sector, and in consultation with key stakeholders, the following recommendations have been formulated to help realise gender equality in the energy sector.

- Integrate and align the separate gender responsive budget codes and processes within the energy sector. Given the impact of energy on education, health, agriculture and climate change and the resulting gender implications, special attention must also be given to monitor the inclusion of gender approaches in the plans, and ensuring sufficient funding of gender approaches within the energy sector and energy interventions in these sectors.
- Develop programs that provide opportunities and build capacity among professional, including women to address supply and demand side of energy innovation, data collection and monitoring
- Replicate and upscale Energy programs targeting women’s–access to clean energy, adopting gender transformative strategies, enhancing the role of women in the sector as beneficiaries, employees, entrepreneurs and increasing women’s voices in decision making
- Energy needs is different for men and women. This difference must be understood at all levels of the government - Federal, Provincial and Local. Evidences reveal a gap in understanding about energy and its gender aspects at the respective local level. Under the new governance system, all three tiers government have the responsibility for implementing energy projects of different scales. It is pertinent that local leaders play an important role in ensuring gender integration in energy projects ensuring gender responsive budget allocation, identifying the beneficiaries, adaptation plans at the local and community levels (for access to energy, adoption of NDC) and ensuring participation of particularly women, and infrastructure for energy related information services.
- Involvement of women in energy-system supply chains is good for them and their families, and it is good for business: The involvement of women in energy-system supply chains as entrepreneurs and employees – particularly in non-traditional roles – is a win-win situation. The energy supply chain offers women an opportunity to earn an income which can enhance their own wellbeing, as well as the wellbeing of their families. It can also build their self-confidence and agency, challenging gender norms in their households and communities. When women have discretion over their earnings, they tend to spend on education, healthcare and their children's welfare. Promote the use of energy for women's productive uses.
- Women typically engage in productive activities at locations (nearer to home with limited market), and they have limited access to assets, finance, markets, infrastructure and skills. For this reason, the benefits accrued by women from their productive activities differ from that of men who have better opportunities. Thus, in promoting energy for productive uses for women these externalities too must be addressed in partnership with financing agencies, private sector and link organisations involved with income generation activities.
- Energy related programmes and projects, whether they are in government or private sector must have robust gender power analysis, and gender smart objectives, results and indicators and gendered M&E plan so that the concerned implementing partners and government agencies can carry out periodic assessments accordingly. Gender impact assessments of energy projects must be carried out to evaluate gender mainstreaming in the programme and make necessary updates and amendments as and when necessary.

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