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Bridging the gender gap: A critical review of Uganda's Energy Transition Plan (ETP) on women's access to clean energy

About Women on Environment Mission (WEM)

Women on Environment Mission (WEM) is a women-led organization dedicated to advancing environmental conservation and the protection of human rights. The organization empowers women and girls by promoting access to clean energy solutions and strengthening their resilience in the face of the climate change crisis. WEM also amplifies women's voices and advocates for their meaningful participation in environmental and climate-related decision-making processes at the local, national, regional, and international levels.

Our Vision

A world in which women rights and integrity of the environment is protected.

Our Mission

To advance women's empowerment and end the climate crisis, poverty and food insecurity.

In 2023, Uganda launched the Energy Transition Plan (ETP) at the 28th Session of the United Nations Conference on Climate Change (COP 28) in Dubai, UAE. The ETP is a strategic roadmap for the development and modernization of Uganda's Energy Sector[i]. The Plan seeks to chart and explore an ambitious, yet feasible pathway to achieve universal access to modern energy and power the country's economic transformation in a sustainable and secure manner.

The ETP being a visionary blueprint poised to revolutionize Uganda's Energy Sector, it articulates ambitious objectives including; achieving universal access to electricity and clean cooking by 2030, diversifying Uganda's energy mix, supporting industrial growth, and mitigating energy-related emissions in line with Uganda's conditional climate commitments. The ETP also sets specific targets, including connecting 45% of the population to grid power by 2030, achieving 40% clean cooking access through improved cookstoves, and over 33% through Liquefied Petroleum Gas (LPG).

However, critical analysis reveals that the ETP exhibits significant gender blindness, failing to adequately address the structural inequalities that shape women's energy experiences. While the ETP sets population wide energy access targets, it lacks gender specific strategies, resulting to missed opportunities from empowering women, enhancing livelihoods and advancing gender equality. The clean cooking targets, despite being critical for reducing women's time burdens and health risks, similarly lack gender responsive design. Cultural norms and gender stereotypes further hinder their participation. Women's limited access to finance, information, and technological factor which are recognized as critical determinants of clean energy adoption remain insufficiently addressed within the ETP's framework. Our research brief underscores the importance of integrating gender-sensitive policies, targeted capacity-building programs, and community engagement to bridge these gaps.

The recommendations emphasize the need for Uganda's policymakers to embed gender considerations into the ETP, promote women's involvement in energy planning and implementation, and establish monitoring mechanisms to track progress toward gender equality in energy access agenda. Addressing these issues is critical not only for achieving sustainable energy goals but also for fostering inclusive economic growth and social development.

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1. Background and introduction

Millions of women and children inhale toxic smoke while preparing family meals, exposing them to household air pollution (HAP) that contributes to 3.7 million^[ii] premature deaths annually, 60 % of which occur in Africa (IEA, 2023). Women and children bear the brunt of this crisis, facing prolonged exposure to indoor air pollution and the burden of collecting time-intensive biomass for fuel. These responsibilities not only harm health but also limit women's access to education and income-generating opportunities, reinforcing social and economic inequalities.

Although global initiatives aim to expand access to clean cooking energy, progress remains slow, particularly in Sub-Saharan Africa, where over 900 million people still lack clean cooking solutions^[iii]. Biomass fuels such as firewood and charcoal continue to dominate household energy use in the region, particularly in rural areas. This makes it unlikely that the Sustainable Development Goal (SDG) 7 (Affordable and Clean Energy)^[iv] will be achieved and undermines progress toward SDG 5 (Gender Equality)^[v] and SDG 13 (Climate Action).

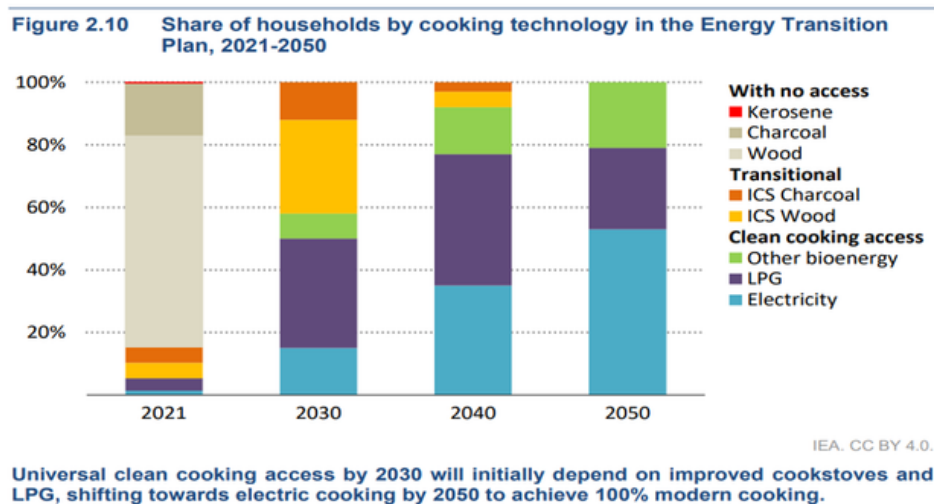
Therefore, the energy transition is not merely a technological shift but a complex social process shaped by gender norms, household power dynamics, and structural inequalities. In rural contexts, women's roles as primary cooks and firewood gatherers position them at the center of energy decisions. Yet many women lack the financial resources, land, or decision-making power that are critical to adopting clean energy.

In Uganda, over 90% of households depend on biomass for cooking, with only 25.3% of households having access to grid electricity^[vi]. The Uganda Vision 2040 and the Fourth National Development Plan recognise energy as a critical driver of socio-economic transformation. To ensure universal access to affordable, reliable and modern energy services, the Government of Uganda (GoU) is committed to scaling up investments in the requisite human resource capacity, to reduce electricity costs, and to expand rural electrification and the use of renewable energy sources. Although Ugandans aspire to live in a society where women and men are empowered to participate as equal partners in the country's development, gender gaps continue to exist in all sectors, including the energy sector. These barriers, including high upfront costs, limited financing options, weak infrastructure, and entrenched gender norms, continue to affect rural households' access to cleaner fuel adoption.

As a result, in December 2023, the Government of Uganda (GoU) launched the country's Energy Transition Plan (ETP) at COP28 in Dubai. The launch signaled Uganda's commitment to achieving carbon neutrality by 2050 and ensuring universal access to electricity by 2030. The ETP was also launched at a time when Uganda was characterised by energy poverty, with access to grid electricity standing at 20% in 2024 and only 15% of Uganda's population having access to clean cooking technologies.

In relation to clean cooking, the ETP seeks to ensure that access to clean cooking moves from 15% in 2023, with Ugandans gaining universal access to clean cooking through Improved Cook stoves (ICS), LPG stoves, biogas, bio-ethanol and electricity by 2030. The Plan projects that almost 40% of those who will gain access to clean cooking by 2030 will do so via an Improved Cook-stove (ICS), while more than one-third (over 33%) will gain access via LPG stoves, which will be increasingly domestically supplied as the development of the Tilenga and Kingfisher oil fields advances in 2025. It is expected that electricity will be the main cooking choice for more than 15% of those gaining access by 2030, while 10% of the population will gain access to clean cooking through biogas and bio-ethanol.

The ETP also notes that beyond 2030, improved cook-stoves will gradually disappear. The plan observes as follows: by 2040, all remaining ICS are of ISO Tier 4 and above, and by 2050, every household in the country cooks with a modern fuel or stove. More than half of the population will be cooking with electricity by 2050. The reliance on fossil LPG declines, with only about one-quarter of the population using it by 2050, down from 40% in 2040.



Whereas the country was excited about ETP that would position Uganda as an energy hub for the East African region, there are a number of areas that need attention to ensure inclusive energy sector development. One of such areas is gender inclusion. In many countries, the energy sector is male dominated which undermines gender equality and sustainable development. In order to move from this status quo and to avoid the energy sector in Uganda to follow suit, there is need for the ETP to identify the required actions and responsible parties that can bring about the gender imbalance to achieve the desired changes within the plan.

Gender integration is critical to enable universal access to modern energy by 2030[vii]. The government projects that in 2030, 45% of the population would have access to grid power. The rest of the population would meet their modern energy needs through access to mini-grids, solar home systems (SHS) and transitional multi-light systems.

This is because interventions that are blind to existing gender biases and discriminatory practices tend to widen gender gaps and inequality. These gaps are often reflected in opportunities, participation and benefits from employment, income, control of resources, freedom of participation and voice. Other gaps and inequalities affect exposure to information, opportunity and wellbeing between men and women.

The differences in access to benefits and in the weight of burdens and disadvantages experienced by men and women when not addressed do negatively impact on the communities. They can expose women, girls, persons with disabilities, the elderly and other vulnerable persons to extreme acts of sexual and gender-based violence and other forms of exploitation.

Gender inequality and lack of equity in the energy sector poses a problem of unequal distribution of opportunities and benefits. It widens inequalities between men and women, leading to unravelling of social networks, disruption of communities and overall inequitable growth. Development approaches that are gender insensitive increase existing societal disparities. Highlighting these issues enables stakeholders to examine and address factors that are within their power to change and guide government, the private sector and civil society to act.

Cultural norms, such as perceptions that food cooked with traditional cooking solutions tastes better and the resistance to changing established cooking routines also affect how energy technologies are evaluated and integrated into daily routines. Yet, these considerations are often overlooked in energy planning, which tends to prioritize technological efficiency over cultural relevance and gender dynamics. Without addressing these deeply rooted socio-cultural and economic barriers, efforts to achieve universal access to clean cooking as indicated in the country's ETP will continue to fall short.



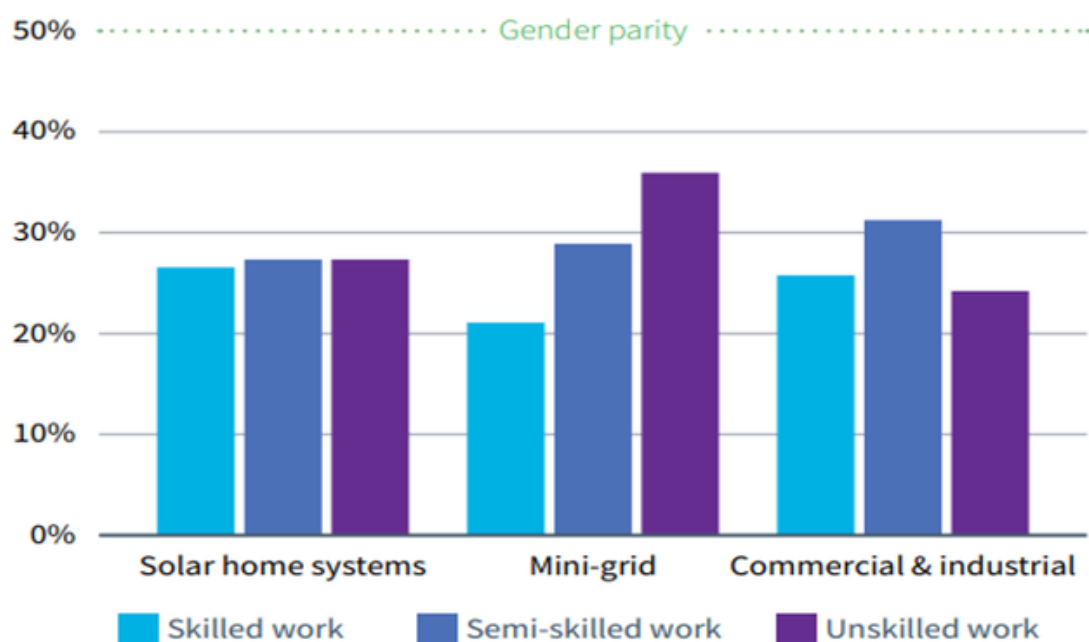
2. Role of women in Uganda's energy sector development

The development of Uganda's energy sector, particularly within the framework of the country's ETP, represents a critical moment in the country's socio-economic path. Historically, the energy sector has been characterized by significant gender disparities, with women predominantly positioned as passive consumers and managers of household energy, while men have dominated the technical, commercial, and policy-making arenas. However, the current transition towards sustainable and clean energy sources provides a unique and timely opportunity to rectify these past imbalances. Integrating women into the energy value chain is no longer viewed merely as a matter of social equity, but rather as a strategic imperative essential for achieving comprehensive, sustainable, and effective energy access across the country. The active involvement of women is increasingly recognized as a fundamental driver of innovation and resilience in the face of evolving energy demands.

A central component of this evolving dynamic is the increasing contribution of women to the deployment, maintenance, and management of renewable energy projects. As the ETP operationalizes, there is a distinct shift in the demographic landscape of the renewable energy workforce. Women are progressively engaging in decentralized solar home systems, community biogas initiatives, and the promotion of clean cooking technologies. This localized involvement is highly critical because women are the primary managers of household energy, they possess an intimate, experiential understanding of energy needs, consumption patterns, and the practical challenges associated with energy poverty at the grassroots level. Therefore, leveraging this localized knowledge ensures that renewable energy projects are designed, implemented, and scaled in a manner that is highly responsive to community realities. Consequently, this leads to enhanced project sustainability, higher adoption rates of clean technologies, and more efficient utilization of energy resources.

Although available information clearly reflects a positive trajectory regarding female inclusion in the renewable energy sector, the participation rate of women in the decentralized renewable energy (DRE) sector currently stands at 28% which is significantly lower than that in the overall economy in Uganda, which stands at 49%^[viii].

Across all decentralized renewable energy technology segments in Uganda and across skill levels, women's participation is below 35%. In the solar household system (SHS) segment, which accounts for 99% of employment in the Ugandan DRE sector, the current share of jobs held by women stands at 28%. The highest share of DRE jobs held by women is observed in unskilled work in the mini-grid segment, while women account for almost 30% of the semi-skilled labor force in the commercial and industrial standalone systems^[i]. This current participation rates of women in Uganda's DRE sector across technologies and skill levels is represented below.



Source: Power for All (2022)

Therefore, beyond grassroots project implementation and technical roles, the elevation of women into decision-making processes within Uganda's energy sector is a vital focal point of the ETP. True and lasting empowerment necessitates robust representation at the strategic level, where overarching policies are formulated, investments are directed, and resource allocation is determined. Encouraging women to assume leadership roles in energy cooperatives, national regulatory bodies, and private energy enterprises fosters a more holistic and inclusive approach to energy planning[i]. When women occupy these critical decision-making spaces, systemic priorities often shift to include household energy security, the mitigation of adverse health impacts associated with traditional biomass fuels, and the economic empowerment of female energy entrepreneurs. Thus, bridging the gender gap at the executive and policy levels translates directly into more inclusive, comprehensive, and effective national energy strategies that serve the entire population.

In addition, the empowerment of women in the energy sector is inextricably linked to broader inclusive growth and socio-economic advancement in Uganda. By facilitating women's access to technical training, formal employment, and entrepreneurial opportunities within the clean energy economy, the ETP catalyzes a profound multiplier effect on local communities. Women entrepreneurs engaged in the distribution, installation, and maintenance of clean energy products frequently reinvest a significant portion of their earnings into their families and communities. This reinvestment drives improved outcomes in local education, health, and nutrition.

Furthermore, the transition away from traditional, highly polluting energy sources significantly alleviates the disproportionate health and labor burdens traditionally borne by women and children. This transition also frees up valuable time and physical energy that can be redirected towards productive, income-generating activities, thereby breaking the cycle of poverty and fostering long-term community resilience.

Looking ahead, sustaining and accelerating the upward trend in women's participation requires deliberate, institutionalized, and forward-thinking strategies. The overarching ETP must embed rigorous gender-responsive budgeting and continuous monitoring mechanisms to ensure that financial resources are equitably distributed and that the socioeconomic impacts of energy policies on women are continuously evaluated. Fostering strong public-private partnerships can also play a pivotal role in creating inclusive supply chains and expanding specialized training opportunities across both urban and rural landscapes. The successful implementation of the ETP will be fundamentally enhanced through active, meaningful and empowered inclusion of women, ensuring that the path toward a sustainable energy future is both equitable and strong.

3. Analysis of policies targeting gender equality in energy access

Uganda's ETP presents a critical opportunity to advance inclusive development, yet women remain underrepresented and underserved across the energy value chain as consumers, producers, entrepreneurs, and decision-makers [xi]. While Uganda has made progress in expanding electricity access and renewable energy generation capacity [xii], this progress has not translated equitably into social and economic empowerment for all population groups.

Women who bear a disproportionate burden of energy and time poverty through unpaid care work limit the amount of time left for activities such as rest, leisure, or even potential income-generating opportunities. It is seen that Ugandan women spend an average of four hours per day on cooking-related activities [xiii]. As a result of this debilitating loss of time, their families and communities are negatively impacted. Additionally, exposure to household air pollution and limited access to productive energy persist as systemic barriers in energy markets and institutions.

The integration of gender dynamics into national energy frameworks represents a critical pattern shift in addressing historically entrenched inequalities, particularly in improving the sector that is heavily reliant on traditional biomass. The ETP now serves as a foundational blueprint for navigating this shift toward sustainable, low-carbon energy systems. However, the success of this transition is fundamentally contingent upon its inclusivity.

An analysis of the policies targeting gender equality in energy access reveals a complex landscape of ambitious legislative frameworks, targeted interventions, and persistent structural barriers. Recognising that women are disproportionately affected by energy poverty, often bear the primary responsibility for household energy procurement, and suffer the adverse health impacts of indoor air pollution, Uganda has increasingly sought to mainstream gender considerations into its national energy strategies.

Multiple institutions shape inclusion outcomes in Uganda's renewable energy sector. For instance, the 1995 Constitution of the Republic of Uganda (Article XI) provides the mandate to establish an appropriate Energy policy when it states: "The State shall promote and implement Energy policies that will ensure that people's basic needs and those of environmental preservation are met". This constitutional requirement makes it incumbent upon the Government to formulate an Energy policy that will not only sustain the impressive economic growth of the last decade or so but also ensure widespread access to affordable modern Energy services for improving the living standards of all the people in Uganda[xiv].

The Uganda Gender Policy[xv] (2007) also provides the overarching national framework for addressing gender inequalities and guides a wide range of actors, including the Ministry of Gender, Labour and Social Development (MGLSD), the Ministry of Energy and Mineral Development (MEMD), development partners, local governments, financial institutions, training institutions, private sector developers, and civil society organizations[xvi].

The Energy Policy 2023 also emphasizes inclusive energy planning. It explicitly seeks to reduce reliance on biomass and increase women's representation in energy decision-making and entrepreneurship. Other policies exist, including other national strategies that recognize energy as a catalyst for socio-economic transformation, with specific guidelines to ensure women are included as beneficiaries of rural electrification and productive energy use.

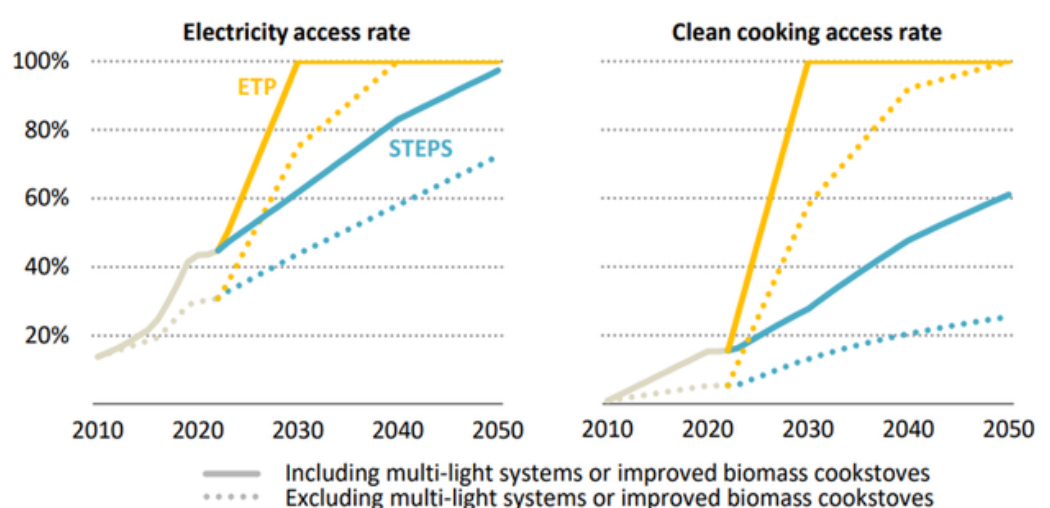
4. Critical gaps in Uganda's ETP gender response to clean energy access

The transition to sustainable and clean energy in Uganda presents a critical opportunity to foster inclusive economic growth and social development. However, the equitable distribution of these benefits is heavily contingent upon understanding and addressing the entrenched gender disparities that characterize the nation's energy landscape. Women in Uganda, particularly those residing in rural and peri-urban areas, bear a disproportionate burden of energy poverty. They are traditionally designated as the primary managers of household energy, responsible for sourcing, processing, and utilizing fuels for cooking, heating, and lighting.

Despite their central role in energy consumption, women face countless systemic barriers that severely restrict their access to modern, clean energy technologies. Unfortunately, despite the country's ETP ambitious clean energy access targets, the plan exhibits several critical shortcomings in its response to gendered energy challenges. These gaps undermine the plan's effectiveness and raise questions about its capacity to deliver equitable energy outcomes. These are discussed below:

Neglect of gender-based violence as an energy issue. Energy poverty exposes women and girls to heightened risks of gender-based violence (GBV), yet national energy planning rarely acknowledges this reality. Energy poverty is not only about limited access to cooking fuels but also creates daily vulnerability. Women and girls, who bear primary responsibility for collecting firewood, often spend 3–5 hours walking long distances through remote and insecure areas. These journeys expose them to harassment, exploitation, assault, and, in severe cases, rape and defilement. As nearby fuel sources diminish due to environmental degradation, they are forced to travel even farther, increasing their exposure to danger. Therefore, promoting and actualising clean cooking for rural communities is itself a GBV prevention strategy. Access to electricity, solar cooking, biogas, and other modern solutions eliminates the need for long fuel-collection trips, directly reducing women's risk of violence. The ETP should recognise fuelwood collection-related GBV as a priority concern and integrate safety considerations into energy infrastructure planning. Targeted measures such as subsidised tariffs for electric cooking, access to cheap credit support for women-led clean energy enterprises, and mandatory gender and safety assessments in all energy projects can further enhance protection and promote women's empowerment.

Absence of gender disaggregated targets: Whereas the ETP establishes national benchmarks for electricity and clean cooking access, it insufficiently integrates gender disaggregated goals, overlooking the daily realities of women who manage household energy, cooking, collecting firewood and water, and caring for families. These responsibilities are labour-intensive and expose women to indoor air pollution, physical strain, and insecurity during fuel collection. The Plan seeks to ensure that 45% of the population has access to grid power by 2030, while it is hoped that the rest of the population will meet their modern energy needs through access to mini-grids, solar home systems (SHs) and transitional multi-light systems (small solar systems). In addition, the plan indicates that by 2050, more than 90% of the population is expected to have access to electricity, with this access being attained either via the main grid (82%) or via a mini-grid (10%). The ETP further observes that the remaining most remote 10% are expected to gain access to clean energy through larger SHs. However, without gender-disaggregated targets, progress toward universal access may hide persistent unfairness. Collective gains can coexist with widening gaps between male- and female-headed households, and between urban and rural women. This lack of specificity renders the ETP effectively gender-blind, notwithstanding its verbal commitments to inclusivity.

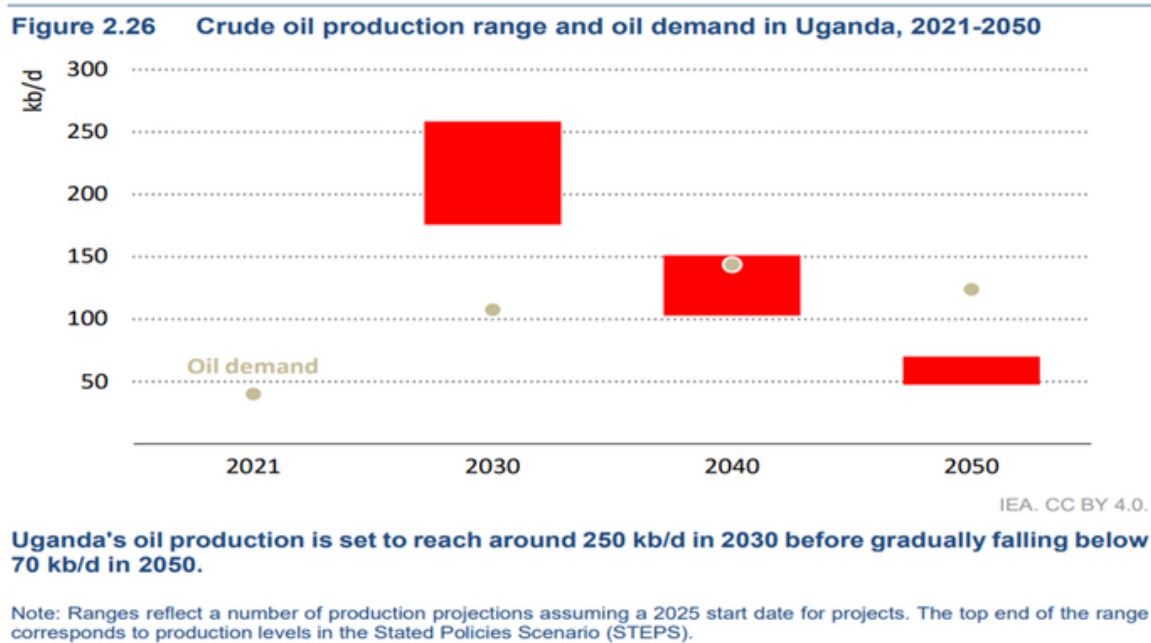


IEA. CC BY 4.0.

The ETP reaches universal access to at least transitional sources such as MLS by 2030. Efforts continue to provide all households with a basic bundle of electricity services by 2040.

Sources: IEA analysis based on data from the [IEA SDG7 database](#) and Uganda Bureau of Statistics.

Reliance on fossil fuels with gendered climate implications: The ETP indicates that Uganda was scheduled to begin commercial oil production in 2025 from discoveries in the Lake Albert basin, with recoverable resources estimated at around 1.7 billion barrels. Production is projected to reach approximately 250 kb/d by 2030, over 80% from the Tilenga project and the remainder from Kingfisher before declining by around 6% annually to 2050.



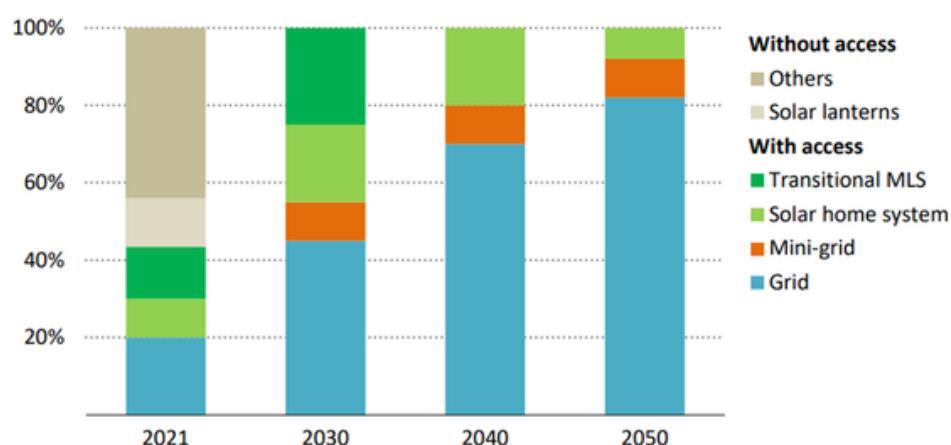
However, the ETP's projected increase in fossil fuel use for cooking, transport, and industrialization carries disproportionate climate risks for women and youth, whose livelihoods in agriculture, fisheries, and natural resource-based sectors are most vulnerable to environmental degradation. This tension between energy access and climate justice has been largely unaddressed in the plan despite women's vulnerability to climate shocks. These challenges indicate that Uganda's ETP, while significant in its ambition, remains insufficiently attuned to the gendered realities of energy poverty.

The plan's technical orientation and aggregate targets risk perpetuating, rather than redressing, the inequalities that constrain women's clean energy access. The continued dependence on fossil fuels such as coal, oil and gas remains one of the biggest threats that women are faced with[i]. This is because the burning of fossil fuels drives the climate crisis, to which women and youth are some of the most vulnerable.

Insufficient participation of women in energy governance: The ETP's design and review processes have been criticized for inadequate engagement with women, who are disproportionately affected by energy poverty. Yet women remain underrepresented in decision-making spaces and face persistent barriers to accessing finance, information, and clean energy technologies. Despite being central to household energy decisions, women's economic empowerment and the daily time burden they carry receive little attention in the transition plan. This neglect has tangible consequences. As wealthier households transition to electricity, LPG, or biogas, poorer and female-headed households remain locked into biomass dependence, deepening existing inequalities. Therefore, without women's meaningful participation in planning, monitoring, and evaluation, energy policies are unlikely to reflect the lived realities of female energy users or to benefit from women's invaluable knowledge of local energy needs and practices.

Limited emphasis on off-grid and decentralized solutions. In the ETP, the scenario indicates that every person in Uganda will have access to at least a transitional multi-light system (MLS) by 2030, alongside a steady increase in average household energy services. To realize this goal, the ETP projects that around 7% of the population must gain access annually (including 1.5% to MLS). The model further indicates a diversified deployment strategy tailored to local conditions showing that 45% of new connections will be achieved via grid expansion, driven by high population density that makes extension economically viable, resulting in a projected increase to 45% of all homes connected by 2030, up from just 20% today.

Figure 2.7 Share of population with electricity access by technology in the Energy Transition Plan, 2021-2050



IEA. CC BY 4.0.

Reaching SDG7 requires a rapid rollout of solar PV access solutions. Over time, households will switch to larger off-grid systems or connect to the grid.

Note: MLS = multi-light systems (off-grid solar).

Sources: IEA analysis based on data from the [IEA SDG7 database](#) and Uganda Bureau of Statistics.

However, given that grid extension is unlikely to reach all rural households by 2030, off-grid solar and improved cookstoves constitute essential pathways for women's energy access. Yet the ETP's prioritization of grid electrification and fossil-fuel-based cooking solutions marginalizes the decentralized renewable technologies that are often most accessible to rural women. This technological bias risks excluding the very populations the plan purports to serve.

Inadequate attention to women's financial and informational barriers. Whereas the ETP identifies access to finance as a general challenge, it does not systematically address the structural financial exclusion that disproportionately affects women. Gender-responsive financing mechanisms such as microfinance tailored to women's income patterns, group-based savings schemes, or subsidy models that reduce upfront costs are notably absent. Similarly, the plan does not incorporate targeted information dissemination strategies to reach women through community networks, women's groups, or local institutions.

5. Other barriers to women's access to renewable energy technologies

The transition to clean energy access is a critical developmental imperative for Uganda, yet this shift is fundamentally constrained by persistent gender disparities. Within the framework of Uganda's ETP, ensuring equitable access to clean energy remains a complex challenge. Women, who are disproportionately responsible for household energy procurement and utilization, face distinct and systemic obstacles that hinder their transition from traditional, highly polluting biomass to modern renewable energy technologies. Understanding these barriers is essential for formulating targeted interventions that not only align with national energy goals but also promote gender equity. An analysis of the landscape reveals that the weaknesses to clean energy adoption among women are deeply rooted in economic, infrastructural, and socio-cultural frameworks.

Available information regarding the obstacles to women's access to renewable energy technologies in Uganda highlight a distinct hierarchy of challenges. The demographic and economic assessments that affordability of clean energy technologies appears as the most formidable barrier, accounting for a 45% of the total challenges faced by women. Equally, less pervasive issues categorized as "Other" constitutes the lowest proportion at 10%. The remaining percentage is distributed among critical factors such as availability and a profound lack of awareness. This distribution highlights the reality that while infrastructural and informational deficits are significant, the primary bottleneck preventing women from embracing clean energy solutions is overwhelmingly economic.

The dominance of affordability, representing 45% of the identified barriers, requires an assessment of the economic marginalization of women in Uganda. Renewable energy technologies, such as solar home systems, advanced clean cookstoves, and biogas digesters, often require substantial upfront capital investment. Women in Uganda are predominantly engaged in the informal economy or subsistence agriculture, sectors characterized by irregular and low income streams.

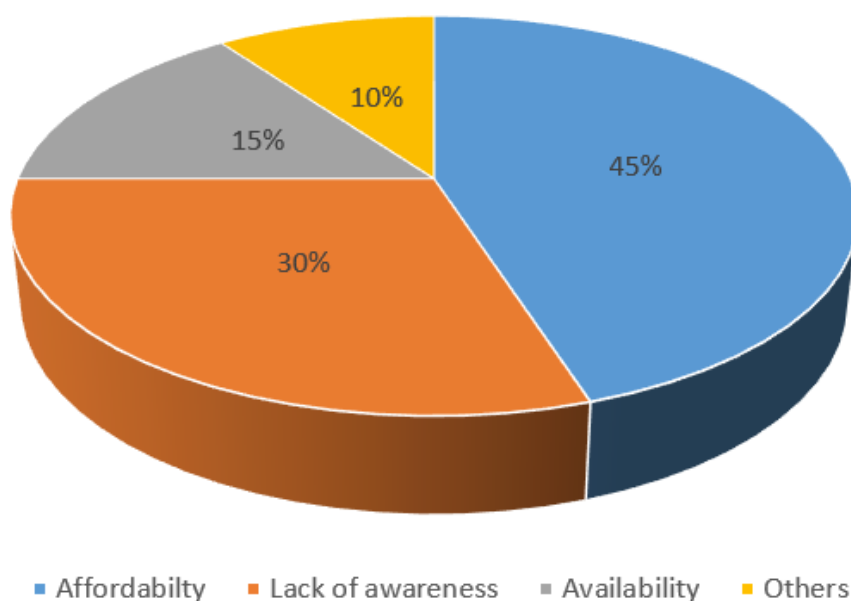
Furthermore, systemic gender inequalities severely limit women's access to formal financial services. Without collateral, which is often tied to land ownership, a right largely held by men due to prevailing customary laws, women are largely excluded from traditional credit markets. Consequently, even when women recognize the long-term health and economic benefits of clean energy, the initial financial outlay remains a challenging obstacle. The inability to finance these technologies forces a continued reliance on cheaper and hazardous traditional fuels such as firewood and charcoal, thereby perpetuating a cycle of poverty and poor health.

Beyond the economic constraints, the availability of renewable energy technologies constituting about 15% also remains a critical barrier, particularly in rural and marginalized communities. The supply chains for clean energy products in Uganda are often concentrated in urban and peri-urban centers. Extending these distribution networks to remote areas involves high logistical costs, which distributors are reluctant to absorb. As a result, women living in rural regions find themselves in energy deserts where modern technologies are physically inaccessible. Even when products are available, the lack of strong after-sales service and maintenance infrastructure undermines the long-term viability of these solutions. If a solar unit or a clean cookstove malfunctions and cannot be repaired locally, the technology is abandoned, leading to a loss of investment and a reversion to traditional energy sources. This lack of reliable availability further diminishes trust in renewable energy interventions.

Affordability and availability aside, a pervasive lack of awareness regarding renewable energy technologies constitutes an equally formidable barrier which constitutes about 30%. Educational disparities and limited access to information networks mean that many women remain uninformed about the existence, operation, and benefits of clean energy alternatives. Marketing and informational campaigns are frequently designed without considering the specific communication channels most accessible to women, such as community gatherings, local women's savings groups, or radio broadcasts in indigenous languages. As a result, women harbor misconceptions about the safety, efficacy, or maintenance requirements of renewable energy systems. Without adequate information, women cannot make informed decisions or advocate for the adoption of these technologies within their households.

Socio-cultural dynamics which is categorized in 'others' further exacerbate these primary barriers. In many Ugandan households, decision-making power regarding significant financial purchases is concentrated in the hands of men. Even if a woman desires to transition to clean cooking technologies to alleviate her domestic burden and protect her health, she may lack the authority to allocate household funds toward such an investment. Therefore, barriers to access are not merely logistical or financial, they are deeply intertwined with patriarchal structures that dictate resource allocation at the micro-level.

Other barriers to women's access to clean energy



To bridge the gender gap and ensure the success of Uganda's ETP, a multi-pronged strategy must be deployed to dismantle these barriers. Addressing the overwhelming affordability constraint requires innovative financial mechanisms tailored to the realities of women's economic lives. The expansion of Pay-As-You-Go business models can significantly lower the barrier to entry by allowing women to pay for energy services in small, manageable increments using mobile money platforms.

Furthermore, the government and development partners should implement targeted end-user subsidies specifically designed for female-headed households and low-income women. Integrating microfinance solutions through established community structures, such as Village Savings and Loan Associations, can also provide women with the necessary credit to purchase renewable technologies without the need for traditional collateral.

To overcome the barriers of availability and awareness, strategies must focus on localizing the renewable energy value chain and empowering women as active participants within it. Training and employing women as distributors, technicians, and sales agents for clean energy products can effectively bridge the last-mile distribution gap.

Female entrepreneurs are uniquely positioned to access female networks, understand the specific energy needs of their peers, and build the trust necessary to encourage adoption. This approach not only improves the physical availability of technologies but also transforms women from passive consumers into active drivers of the energy transition. Additionally, awareness campaigns must be gender-responsive, utilizing localized messaging that directly addresses the health, economic, and time-saving benefits of clean energy, delivered through channels that women frequently access.

Finally, addressing the barriers to women's clean energy access requires the integration of gender-responsive budgeting and policy formulation within the broader ETP. Through acknowledging that affordability alongside availability and awareness, are deeply gendered issues, policymakers can design interventions that are truly equitable. Ensuring that women have unrestricted access to renewable energy technologies is not merely a matter of social justice, it is a fundamental condition for achieving sustainable development and fulfilling Uganda's long-term environmental and economic objectives.

6. Impact of clean energy on women's economic and social empowerment

The transition to clean energy in Uganda represents a deep opportunity to catalyze systemic changes that extend far beyond environmental sustainability, particularly concerning the economic and social empowerment of women. Within the ETP's framework, ensuring equitable access to modern, reliable, and sustainable energy services is not merely an infrastructure objective, it is a fundamental criterion for bridging the entrenched gender gap. The intersection of energy access and gender equity is deeply rooted in the traditional division of labor, where women and girls bear the disproportionate burden of securing household energy.

Therefore, the introduction of clean energy interventions serves as a transformative mechanism, yielding multifaceted benefits that fundamentally alter the socio-economic trajectory of women across both rural and peri-urban areas. An analysis of the economic and social benefits of clean energy access for women in Uganda shows a clear triple impact structure. Specifically, at the level of economic benefits, the specific impact is improved livelihoods, while at health benefits, the specific impact is improved health outcomes and at social benefits, the specific impact is community empowerment. The economic empowerment of women through clean energy access is primarily realized through the significant enhancement of their livelihoods. In regions heavily reliant on traditional biomass, women spend a considerable portion of their daily routines gathering firewood or agricultural residues.

This phenomenon, often termed as time poverty severely restricts their capacity to engage in productive, income-generating activities. The introduction of clean cooking solutions and decentralized solar energy systems directly mitigates this time poverty. This reduces the hours spent on fuel collection and inefficient cooking practices and this can enable them to pursue entrepreneurial activities, vocational training, or formal employment.

Furthermore, access to electricity enables the establishment of micro-enterprises that rely on power, such as tailoring shops requiring electric sewing machines, refrigeration for perishable agricultural goods, or mobile phone charging kiosks. Beyond facilitating secondary businesses, the clean energy sector itself presents direct economic opportunities. Women are increasingly being integrated into the energy value chain as distributors, technicians, and sales agents for solar products and clean cookstoves. This integration not only provides them with independent financial resources but also positions them as pivotal agents of technological adoption within their communities, hence reinforcing their economic resilience and contributing to broader poverty alleviation objectives.

Similar to the economic advancements, the health benefits associated with clean energy access constitute a critical pillar of women's empowerment, with the specific impact manifesting as substantially improved health outcomes. The reliance on solid fuels for cooking in poorly ventilated spaces exposes women and accompanying infants to severe indoor air pollution, a leading cause of respiratory illnesses, cardiovascular diseases, and chronic eye infections. The transition to clean cooking technologies, such as biogas, ethanol, or advanced electric cookstoves, causes a dramatic reduction in the emission of harmful particulate matter and carbon monoxide. They can also experience an immediate and sustained improvement in their respiratory and ocular health, which inherently reduces household medical expenditures and prevents the loss of productive days due to illness. The electrification significantly enhances the quality of maternal healthcare services.

The social dimensions of clean energy access are equally transformative, culminating in robust community empowerment. When women are unburdened from the grueling demands of traditional energy procurement, their social standing and participatory capacity within the community are markedly elevated. Reliable lighting extends the productive hours of the day, creating a conducive environment for adult literacy programs and allowing girls to dedicate evening hours to educational pursuits. This educational continuity is foundational to breaking intergenerational cycles of poverty and gender disparity.

A review of the country's ETP reveals that clean energy is a potent catalyst for holistic empowerment. The strategic alignment of energy policies with gender-responsive implementation frameworks ensures that the transition is not merely a shift in fuel sources, but an inclusive socio-economic intervention. Through steadily addressing the structural barriers of time poverty, health vulnerabilities, and social marginalization, clean energy access equips women with the agency to reshape their destinies. The continuous expansion of these initiatives, coupled with targeted financial and capacity-building support, will be instrumental in maximizing the economic and social dividends.

7. Recommendations

i). Enhance policy frameworks to bridge the gender gap: The ETP is not merely a supplementary objective but a fundamental prerequisite for achieving a truly equitable and sustainable energy landscape. The plan should implement actionable, gender-inclusive reforms that transition women from passive consumers of energy to active participants, innovators, and leaders within the sector. Therefore, achieving this paradigm shift requires a comprehensive restructuring of existing policy mechanisms, ensuring that gender-sensitive approaches are mainstreamed across all levels of energy planning, execution, and evaluation.

ii). Develop gender specific targets: The ETP should include gender-sensitive vulnerability analyses to understand how energy poverty affect women, men, boys, girls and other marginalized groups differently. Insights from these analyses can guide the prioritization and development of measured objectives, actions and targets for gender equality in clean energy access strategies and actions.

iii). Identify gender specific actions: The ETP should include a dedicated gender component with targeted actions to reduce gender irregularity for clean energy access. These actions include expanding women's access to clean energy loans and credits, energy-related businesses and others. These interventions should be designed and implemented in partnership with women's organizations and community leaders to ensure they are gender transformative and supported by clear implementation mechanisms and monitoring frameworks.

iv). Create a gender-responsive monitoring, evaluation and reporting framework: The ETP should incorporate gender-sensitive indicators into its monitoring and evaluation systems across all sectors and mechanisms to track and report gender outcomes. Periodic gender audits and participatory reviews should be planned and undertaken to enhance transparency framework on gender responsive actions and outcomes.

v). Establish financial committee and gender responsive budgeting: The ETP should clearly identify budget lines for gender-related activities and establish ways to track expenditures through gender responsive budgeting and financial reporting. Uganda should work with partners to expand financial access for grassroots women's organizations. These investments should aim to remove structural barriers and unlock the full potential of women's contributions to clean energy access agenda.

vi). Strengthen capacity building and education for women in clean energy technologies: To achieve a truly gender-inclusive energy transition under ETP, there should be a deliberate and robust focus on capacity building and education. Empowering women with specialized skills in clean energy technologies is a fundamental prerequisite for bridging the gender gap, ensuring that the socio-economic benefits of the energy transition are equitably distributed across all demographics.

8. Conclusions

This research brief leaves little room for uncertainty. Uganda's ETP provides the blueprint, but it critically lacks the backbone of gender-responsive implementation. As the evidence demonstrates, energy transitions are not merely technical or economic undertakings, they are deeply social and gendered processes that risk reinforcing existing inequalities unless deliberate action is taken. Women are not passively waiting for clean energy, they are walking kilometres daily for firewood, breathing toxic smoke, sacrificing their health, education, and economic potential, and facing heightened risks of gender-based violence.

The cost of inaction is measured in lost livelihoods, degraded forests, and preventable deaths. With over 90% of rural households still dependent on biomass and female-headed households experiencing higher levels of energy deprivation, the gap between policy ambition and lived reality remains stark. The ETP's insufficient integration of gender, evidenced by the absence of gender-sensitive targets, the failure to prioritise off-grid and clean cooking solutions, and the lack of gender-based violence prevention in energy planning demonstrates that good intentions alone will not deliver change.

Uganda has an opportunity to lead East Africa in gender-just energy transitions. Achieving this requires moving beyond pilot projects and promises to systemic accountability. The ETP must be reformed to integrate concrete gender and youth targets; prioritise renewable energy to protect women from fossil fuel dependency; establish mandatory gender and safety assessments in all energy projects and ensure that clean cooking is affordable, accessible, and dignified particularly for women and girls.

The time for pilot projects and promises is over. It is time for scale. It is time for accountability. It is time to deliver. Uganda's energy future will be truly transformative only when every household can cook without fear, hardship, or harm, and when women are not merely participants but leaders, engineers, and decision-makers in the energy sector.

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