



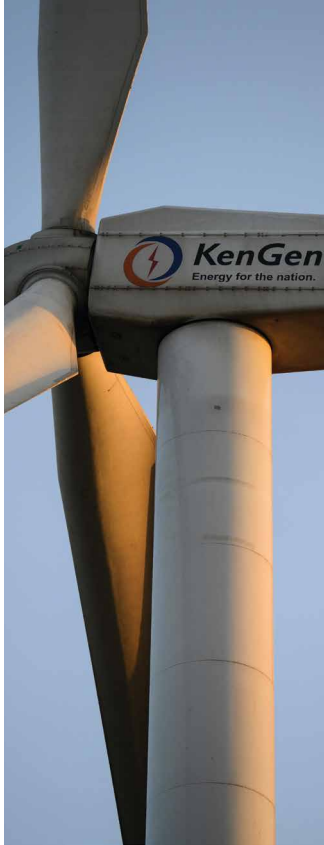
USAID
FROM THE AMERICAN PEOPLE



ADVANCING GENDER IN THE ENVIRONMENT: MAKING THE CASE FOR WOMEN IN THE ENERGY SECTOR

AGENT Thematic Energy Brief Series | 2018





In 2017, Rebecca Miano became the first woman CEO of KenGen, Kenya's leading electric power generation company, producing 80% of electricity consumed in the country.

JOERG BOETHLING | ALAMY

ABOUT THIS SERIES

Research increasingly demonstrates the benefits of integrating gender considerations into the energy value chain and throughout the power sector. When the barriers that prevent women from having equal access to energy and economic opportunities are removed, significant productivity gains are unlocked, thereby strengthening development and economic outcomes. Additionally, women are transforming the energy sector in their roles as energy entrepreneurs, innovators and decision makers.

Gender mainstreaming in the energy sector is gaining traction globally—from international commitments to national policies, institutional reforms and project approaches. Moving beyond recognizing women as only users of energy towards acknowledging their potential to formally participate in the sector as providers and decision makers will result in increased opportunities for women and men to benefit fully from the energy sector's economic and investment opportunities.

The Advancing Gender in the Environment (AGENT) *Thematic Energy Brief Series* showcases advancements towards the achievement of gender equality in the energy sector and identifies areas for further development and exploration. This series has been developed with the guidance and support of a network of energy experts hosted by AGENT. AGENT is a ten-year program launched by the United States Agency for International Development (USAID) in 2014 and implemented by the International Union for Conservation of Nature (IUCN). The purpose of the partnership is to increase the effectiveness of USAID's environment programming through robust gender integration and improve gender equality and women's empowerment outcomes in a broad range of environmental sectors. Recognizing women as agents of change, and the value of diverse knowledge, experiences and capacities of women and men alike, AGENT envisions a world that approaches environmental work at all levels with gender-responsive policy and action. AGENT drives transformation toward a more sustainable and equitable future for all.



On the cover: An electrical engineer assists in the construction of a new electrical substation in Tanga, Tanzania.

Pictured above: Women weld joints during the construction of solar cookers at the Barefoot College in Tilonia, Rajasthan, India.

ASHLEY COOPER | ALAMY

IN THIS BRIEF

This brief provides an overview of the role of women in the formal energy sector. It presents evidence that women's equal participation in the sector will result in measurable benefits, including increased returns on investments and stronger development outcomes. Additionally, the brief identifies ways in which women are driving the growth of the renewable energy sector and presents a global overview of best practices and solutions that remove barriers to participation. A list of recommendations with links to resources for stakeholders, including policymakers and practitioners, is provided at the end.

KEY MESSAGES

- Integrating women into all levels of the energy value chain will lead to more effective and efficient clean energy initiatives, unleash greater return on investments and expand emission reduction opportunities.
- Despite considerable progress at a smaller, individual scale, further research and investment is needed to attract and retain women to participate in the energy sector.
- The private sector has the potential to offer many opportunities for women to formally participate in the sector. However, further research and advocacy is needed to ensure the private sector is actively recruiting and retaining women, as well as developing gender-responsive and inclusive strategies.
- Creating and sustaining suitable environments for women is necessary. It allows for their engagement and access to knowledge, finance and resources, as well as provides them with role models, mentors and flexible working arrangements for increased impact.



Increased customer satisfaction: before and after the Jamaica Power Service (JPS) hires more women in customer service.

DATA FROM JPS

ENERGIZING THE SECTOR - THE POTENTIAL OF WOMEN

Studies show if women played an identical role in labor markets as men, they could contribute between US\$12 trillion and US\$28 trillion to global annual GDP. To put these figures into perspective, this means that the advancement of women’s equality in labor markets could contribute to the global economy at a value equivalent to the combined size of the Chinese and US economies today.ⁱ In addition, gender diversity in high-level decision making is shown to correlate with improved business performance and investment. This is supported by evidence that companies with more women on their boards perform better with regards to their return on investment, sales and equity.ⁱⁱ Therefore, investing in the advancement and participation of women in the energy sector labor force is not only the right thing to do, but also the *smart* thing to do.

Examples from the energy sector suggest that integrating women into different levels of the energy value chain unlocks greater productivity, return on investment and customer satisfaction. For example, a study from Nicaragua reveals that rural electrification raised female employment by 23% as women were relieved from a number of previously time-consuming household chores, thereby enabling them to work outside the home and earn incomes while contributing to the economy.ⁱⁱⁱ Companies, such as Jamaica Power Service (JPS), are seeing the benefits of including women in their labor force; customer satisfaction jumped from 23% to 70% when JPS increased the number of women in their customer service roster.^{iv} Additionally, the correlative findings of a Berkeley-Haas School of Business study suggest that companies with more women on their board of directors are more likely to be proactive in improving energy efficiency, lowering company costs, and to invest in renewable power generation.^v

The renewable energy sector is associated with significant job creation across the entire value chain, including at the points of project development and installation; operation and maintenance; and manufacturing, deployment and export.^{vi} For example, in 2016, global renewable energy employed 9.8 million people—an 11% increase from the year before—and the trend is likely to continue.^{vii} Job creation in the renewable energy sector continues to rise, in contrast with depressed labor markets in the broader energy sector. Ensuring inclusive growth in the sector – by allowing both women and men to share their skills and benefit from new labor opportunities – is central to achieving development outcomes that do not exacerbate existing labor and income disparities, but rather builds on, serves and enhances the unique capacities and priorities of women and men alike.



DATA FROM ERNST & YOUNG

GLOBAL OUTLOOK ON WOMEN IN THE ENERGY SECTOR

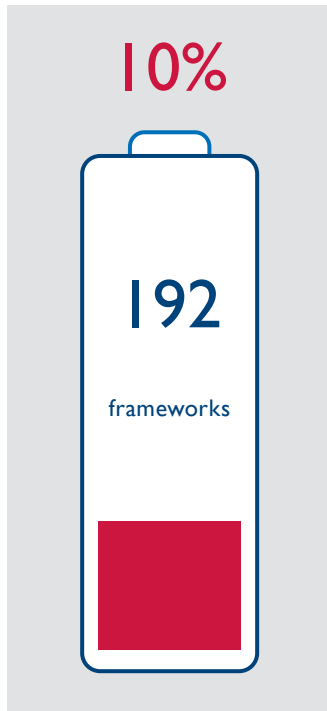
HIGH-LEVEL DECISION MAKING

Data shows that women’s participation in the energy sector, particularly as high-level decision makers, remains low. For example, women comprise only 16% of board positions among 200 top utility companies.^{viii} Studies conducted by IUCN in 2015 found that women occupy only 4% of the Chair positions on the World Energy Council (WEC) and 18% of the Secretary positions, while only 10% of Energy Ministries are headed by women.^{ix} When women are excluded from energy governance, decision-making processes are more likely to result in energy projects and policies that ignore the unique needs, knowledge and contributions of women. An Ernst and Young study confirms that having greater numbers of women on boards translates into higher returns on equity and investment, with the top 20 most diverse utilities outperforming the less diverse ones—a difference that can constitute millions of dollars in profit.^x

ENERGY SECTOR LABOR FORCE

The energy sector remains largely male-dominated—the World Economic Forum estimated that women made up less than 20% of the labor force in 2015.^{xi} A survey conducted by USAID as part of its [Engendering Utilities](#) program extrapolates that women make up an estimated 13% of the utilities workforce in Eastern Europe, the Middle East and Africa.^{xii} Additionally, the survey found that utilities do not often disaggregate employment by gender nor offer interventions that improve or monitor gender equality in hiring practices. Although the renewable energy sector is also male-dominated, recent studies suggest that women’s participation in the sector may be greater than in the traditional energy sector. The International Renewable Energy Agency’s (IRENA) 2015 survey among private energy companies showed that women represent an average of 35% of the workforce of those surveyed.^{xiii} The survey also shed light on the roles women fulfill in the sector, representing 46% of the administrative workforce, 28% of the technical workforce and 32% of management roles.^{xiv} The relative newness and non-traditional nature of clean energy presents an invaluable opportunity to scale up a gender-responsive approach that empowers women to play an active role in the sector.

However, even if women are gaining interest in the renewable energy field, they face a series of challenges to rise to leadership positions and remain in the sector. These challenges include the difficulty of maneuvering in a male-dominated sector, as well as a lack of mentors, sponsors and female role models. Labor conditions, such as long working days and requirements of high numbers of site visits to distant locations, put a strain on personal and family relations, particularly for those—whether women or men—who are also household caregivers.^{xv}



A 2017 IUCN report shows only 10% of the 192 national energy frameworks analyzed recognize the need to increase women's participation in the energy sector.

DATA FROM IUCN

BARRIERS TO WOMEN'S PARTICIPATION IN THE FORMAL ENERGY SECTOR

While more attention is being directed toward the crucial role of women in the energy sector, there are still many situations in which women face difficulties joining or remaining in it as well as have less access to decision-making spaces regarding energy. Women may not be given the same career opportunities as men, experience discrimination in the workplace, and/or work in environments that are not supportive to achieving a work, life and family balance. To increase women's participation in the energy sector, it is necessary to not only understand the evidence for it, but also the barriers women face in joining and remaining.

Conducting a gender analysis is key to understanding the barriers women face and identifying solutions. For example, when assessing the implications of an intervention—whether a policy or a project—USAID gathers sex-disaggregated data and information across several key domains that include assessments regarding: the institutional and legal frameworks in which women and men act and make decisions; cultural norms and beliefs; gender roles, responsibilities and time use; access to and control over assets and resources, including economic opportunities; and patterns of power and decision making; which together provide a good understanding of the context and barriers faced by women.^{xvi}

According to a global analysis of national energy frameworks, only one-third include references to women or gender.^{xvii} Not only are women not often included in national energy frameworks, but they have less access to decision-making spaces to shape those frameworks as well. For example, the same analysis finds that only 10% of the frameworks either acknowledge women's underrepresentation in the sector or propose actions to close this gap.^{xviii}



Girls attend EkoElectricity Distribution Company's (EKEDP) first ever Bring Your Daughter to Work Day, supported by USAID's Engendering Utilities program, to encourage Nigerian girls to join STEM fields and encourage interest in the many job opportunities in the energy sector.

EKO-ELECTRICITY DISTRIBUTION COMPANY (EKEDP)

A study conducted in the United States shows that social stereotyping during early education means that girls are less likely than boys to be encouraged to engage in activities that would increase their options later on for joining science, technology, engineering and mathematic (STEM) field studies, which are essential for joining several technical and professional positions in the energy sector.^{xix} Though this example regarding the education sector is country-specific, other countries may be facing similar challenges within their own education systems. As many jobs in the energy sector are historically not held by women, it is necessary that educators, advocates and workforce professionals ensure women are aware of these opportunities and receive support in seeking training, education (specifically STEM education) to overcome cultural norms and beliefs and pursue employment.

Gender roles, responsibilities and time use also affect women's participation and retention in the sector. According to a 2012 report by the European Institute for Gender Equality (EIGE), women's roles as caregivers are one of the main challenges preventing them from retaining their participation in Europe's energy sector.^{xx} The report states that, "... success in one's job is associated with long working hours. The lack of family-friendly working conditions makes it difficult for women to balance home and work life. Some 95% of men in the [energy] sector have partners and one-third of them do not work outside the home, whereas the majority of partners of the women in the [energy] sector are working."^{xxi} One can then deduce that in order for women and men to successfully join—and remain—in the energy sector, it is necessary that both they and their partners have access to diverse support systems, such as daycare facilities, flexible hours and a cultural change that focuses on results rather than on reported working hours. Improving labor conditions may ensure that the best talent is retained and that fewer household strains are passed on to family members.

Though these barriers present challenges to increasing the participation of women in the sector, there are numerous actors across all levels developing and implementing transformative solutions to not only remove them, but to encourage women's participation. From legal standards set by governments, to recruitment and human resources policies, to opportunities through training and supportive associations, many are recognizing the value of women in the sector and working to actively recruit and retain them.

TRANSFORMATIVE SOLUTIONS

GENDER EQUALITY POLICIES AND QUOTA IMPLEMENTATION

Nicaragua's Gender Equality Act (Law 648) establishes the objective to achieve gender parity in the labor force for all sectors of the economy, and government institutions have embraced this opportunity to create spaces and recruit women to join their ranks, including the National Electric Transmission Company (ENATREL).^{xxii} As a result of this national policy on quotas, ENATREL reported in 2013 that 50% of its high-level decision-making positions were held by women.^{xxiii} ENATREL also recognized the challenge of achieving a similar result in the technical and field level positions, for which the company designed an institutional policy to recruit women as a first option for new vacancies in the institution.^{xxiv}

RECRUITMENT POLICIES

Modifying recruitment methods may also support increasing women's participation in the renewable energy sector. The Saint-Nazaire plant in France is an assembly plant for offshore wind turbines, an industry where women do not traditionally have high representation in the workforce. In its efforts to increase the diversity of its workforce, the plant approached temporary job agencies and developed a recruitment method based on abilities, assessment of spatial awareness, assembly skills and capacity to follow mechanical procedures.^{xxv} These techniques helped the plant approach a broader set of candidates and overcome some of the social prejudices against bringing women into technical work.^{xxvi} The approach, combined with gender-sensitive human resources policies and attention to ergonomics, contributed to the plant reaching 30% participation by women in its labor force.^{xxvii}

HUMAN RESOURCES POLICIES

Human resource policies can cultivate a supportive environment that allows for women and men to better balance their professional and family lives. Examples of interventions include establishing flexible working hours, allowing for parental/family leave to take care of sick or unwell family members and/or providing caregiving support or paying wages sufficient for employees to find the caregiving support they need.

Energy companies can work toward gender equality by reviewing human resources policies and engaging in corporate social responsibility initiatives that address gender gaps. For example, Itaipu Binacional, a bi-national hydroelectric company operating in Brazil and Paraguay, has set supportive policies, such as implementing flexible hours, extending maternity leave to up to six months, recognizing family leave for female and male employees to tend to sick family members, establishing a daycare facility to care for the children of their employees and the use of inclusive language when recruiting personnel.^{xxviii} These measures resulted in a significant increase in the participation of women within the company.

VOCATIONAL TRAINING

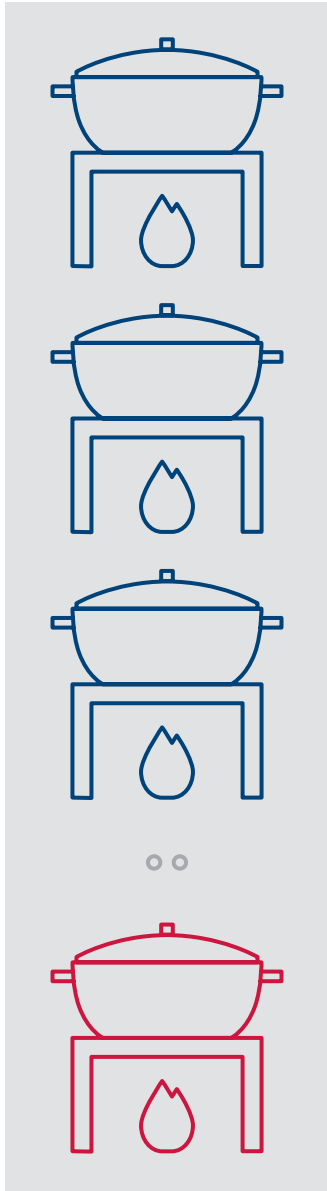
Vocational training programs are also recognizing the role that women can play as renewable energy technicians. One such example is the Vocational Training and Education for Clean Energy (VOCTEC) Program, an initiative implemented by Arizona State University with the support of USAID and IRENA.^{xxix} The implementing team attracts both experts in clean energy technology and gender-conscious programming. The VOCTEC training curriculum is designed to take into account cultural aspects of trainees and increase social awareness and gender inclusion in order to achieve maximum impact and participation among women and disadvantaged groups.^{xxx}

WOMEN'S ASSOCIATIONS

A series of strategies are emerging to increase women's interest and retention in the energy sector. Women's associations, such as [Women of Renewable Industries and Sustainable Energy \(WRISE\)](#), [Women in Renewable Energy \(WIRE\) mentor network](#), the [POWERful Women Initiative](#) and [Women in African Power \(WiAP\)](#), are fostering information exchanges and mentoring programs in order to strengthen the capacity and visibility of women in the energy sector. For example, [Women in Sustainability, Environment and Renewable Energy \(WISER\)](#) encourages women to join the renewable energy sector by providing women with the opportunity to exchange experiences through open forums and by establishing an internship program for women to gain experience in the solar sector.^{xxxi}

LIGHTING A CAREER PATH FOR WOMEN AND GIRLS: USAID'S ENGENDERING UTILITIES PROGRAM

USAID's [Engendering Utilities Program](#) is generating data and knowledge on gender-equitable interventions across the human resources employee lifecycle in power sector utilities to facilitate approaches that will improve women's participation and retention in energy sector. To date, Engendering Utilities works with seven partner utilities in five countries: Jordan, Georgia, Macedonia, Nigeria and Kenya.



Women sell clean cookstoves at a 3:1 ratio compared to men in Kenya.

DATA FROM GACC

WOMEN AS ENERGY ENTREPRENEURS

Women are at the forefront of entrepreneurship and innovative energy solutions in the production, distribution and servicing of energy technologies. Evidence shows that women entrepreneurs are in a better position to interact and engage with consumers. For example, Kopernik’s ‘Wonder Women’ Initiative^{xxxii} and Solar Sister^{xxxiii} tailor marketing strategies, capacity building and business development to invest in women as entrepreneurs.

In a similar manner, the *Empowered Entrepreneur Training Program*—a USAID-supported training program¹ created by Johns Hopkins University, the Global Alliance for Clean Cookstoves and the Visionaria Network and implemented by Winrock International—teaches women to develop their business skills, agency and leadership, to take advantage of their environment and become successful entrepreneurs.^{xxxiv} A recent study in Kenya found that women who participated in the agency-based training program sold nearly three times as many cookstoves as their male counterparts.^{xxxv} These strategies deliver improved energy access and advance women’s economic empowerment and other social benefits, including by positioning women as role models in the technology industry.

Biogas programs in Nepal^{xxxvi} and Vietnam^{xxxvii} have invested in building women’s skills as masons to support their participation in the production of biodigesters and to become owners of biodigester companies. Efforts such as those from Barefoot College in India^{xxxviii} and Grameen Shakti in Bangladesh^{xxxix} have proven that illiterate women can become solar engineers and bring both light and a gender-responsive paradigm shift to rural communities.

¹ This program has been designed following the *Empowered Entrepreneurs Training Handbook* developed by the Global Alliance for Clean Cookstoves. The handbook can be accessed [here](#).



In 2013, Nicaragua's National Electric Transmission Company (ENATREL) reported that 50% of its high-level decision-making positions were held by women. Here, a female employee of ENATREL repairs power lines.

ING. JOSE RAMON ZELEDON

RECOMMENDATIONS

Continued research is necessary to increase the understanding of how the equitable participation of women in the energy sector can result in measurable benefits for both women and the sector at large. For example, governments, utilities and the private sector should collect and share sex-disaggregated data to develop a baseline for tracking women's participation. This baseline data can inform research and reporting on the economic, social and environmental benefits of gender equality in the workforce. Data supporting the benefits of women's equitable participation can shift cultural norms and perceptions that affect women's participation in the sector by advocating that gender equality creates benefits for everyone.

As outlined in this brief, women's engagement in the energy sector is critical. However, this cannot be accomplished without establishing and sustaining strong political will among decision makers, financial institutions and leaders across sectors to ensure equal opportunities for women and achieve economic benefits that result from a more diverse and innovative workforce.

The following pages present interventions, recommendations and tools by stakeholder group to transform the sector.

POLICYMAKERS OUTSIDE THE ENERGY SECTOR

- Encourage Ministries of Gender/Women’s Affairs to increase their understanding of energy technologies and the benefits these bring to women and girls in order to contribute substantively to policymaking discussions;
- Encourage energy and education sectors to develop school curricula that will increase the interest of girls and boys in STEM;
- Ensure gender balance of policymakers and other stakeholders in any policy discussions; and
- Consider implementing broader gender-responsive workplace and hiring policies.



Click the icon to access lessons from the ENERGIA International Network on mainstreaming gender in energy sector practice and policy.

MINISTRIES OF ENERGY

- Develop gender-responsive policies, energy projects, etc., that encourage women’s participation in the energy sector’s labor force;
- Recognize women’s roles and potential contributions in the energy value chain in energy policies, programs and interventions;
- Encourage gender focal points to develop internal institutional frameworks to increase women’s participation, as well as to provide input to other relevant ministries’ and stakeholders’ gender diversity initiatives; and
- Collect and track data on demographics and participation in energy-related education programs and in industry reporting, such as data on salary gaps, retention and advancement, women CEOs and women on boards, etc.



Click the icon to access the ECOWAS policy for gender mainstreaming in energy access, demonstrating how Energy Ministries can achieve energy access policy goals equitably.

PRIVATE SECTOR (INCLUDING ENERGY COMPANIES)

- Develop human resource policies to address gender discrimination, eradicate sexual harassment, and promote flexible working hours;
- Facilitate affordable and reliable social support systems—i.e., daycare, after-school care facilities for children, policies for taking care of ill family members—to allow women and men to fully engage in the energy sector;
- Provide equal opportunities for women through the design and implementation of human resource policies, including considering quotas for gender parity, mentoring and creating adequate working environments (e.g., flexibility in the workplace) for both women and men;
- Collect and share sex-disaggregated data and information from gender-responsive indicators, e.g., quality of life, work burden, etc.;
- Encourage women and men working in the sector to act as mentors, sponsors, and ambassadors for gender equality and women’s empowerment;
- Empower women working in the sector to act as visible role models and trainers for women; and
- Ensure gender balance and equal participation of women at all levels within related private sector companies – and consider tracking and publishing this data.



Click on the icon to learn how Itaipu, a bi-national generation company, addresses gender equality within its company activities both in Brazil and Paraguay.



Click on the icon to stay updated on USAID’s Engendering Utilities resources, developed for the private sector.

DONORS

- Fund research that builds evidence based on the value of having women in the energy sector at all levels (e.g., in the broader and last-mile energy sector);
- Address barriers to women participating in STEM and the energy sector in particular;
- Require gender-responsive programs and monitoring and evaluation frameworks to promote women's participation;
- Support the piloting and identification of strategies to increase women's participation in the sector;
- Develop and implement a gender policy for guiding the work implemented by projects benefiting from their financial support; and
- Ensure or work to ensure gender balance across funding/donor roles.



Click the icon to access a tool kit by the World Bank Group on integrating gender considerations into energy operations.

ENERGY PROJECT IMPLEMENTERS

- Build and provide evidence on the value of having women in the broader and last-mile energy sector;
- Encourage women and men working in the sector to act as mentors, sponsors and ambassadors for gender equality and women's empowerment;
- Empower women working in the sector to act as visible role models and trainers for women;
- Include both women and men in energy projects to ensure sustainability; and
- Ensure gender balance and equal participation of women at all levels within project implementers and across supply chain – and consider tracking and publishing this data.



Click the icon to access a gender tool kit by the Asian Development Bank (ADB) on conceptualizing and designing gender-responsive projects in the energy sector.

ACADEMIA, EDUCATIONAL AND VOCATIONAL CENTERS

- Ensure that education systems engage both girls and boys to encourage interest in STEM fields;
- Sensitize teachers and professors on social and gender stereotypes to reduce the unintended discouragement of girls and women to participate in STEM fields;
- Develop curricula that will increase and sustain girls' and women's interest in STEM careers;
- Ensure gender balance among faculty and staff, consider tracking and publishing data;
- Collaborate with professional associations and/or companies to bring women role models to connect with students;
- Provide career support for students and alumni;
- Track gender disaggregated data on alumni salary and advancement; and
- Research, document and communicate the benefits of increasing women's participation in the renewable energy sector.



Click the icon to access experiential knowledge on increasing girls' and young women's interest in STEM and the energy sector.

RESOURCES

DOCUMENTS AND CASE STUDIES

- ASU. (n.d.). *Vocational training & education for clean energy* (VOCTEC). Brochure. Arizona State University.
- Biogas Sector Partnership Nepal (BSP). (2009). *Gender mainstreaming in the biogas support programme, Nepal*. Produced for ENERGIA.
- Carter, N.M. & Wagner, H.M. (2011). *The bottom line: Corporate performance and women's representation on boards* (2004-2008). Catalyst. Available [here](#).
- ECREEE & NREL. (2015). *Situation analysis of energy and gender issues in ECOWAS member states*. Developed for the ECOWAS Policy for Gender Mainstreaming in Energy Access.
- EY. (2016). *Women in power and utility index 2015*.
- GE Renewable Energy. (2016). Women brush prejudice aside at Saint-Nazaire. Blog. May 11, 2016, available [here](#).
- Global Clean Cookstove Alliance. (2015). *Scaling adoption of clean cooking solutions through women's empowerment*.
- IRENA. (2016). *Renewable energy and jobs*. Annual Review 2016. Available [here](#).
- IRENA. (2017). *Renewable energy and jobs*. Annual Review 2017. Available [here](#).
- IRENA (2011). *IRENA working paper: Renewable energy jobs: Status, prospects and policies*. Available [here](#).
- IUCN. (2015). *Women in environmental decision making: New research from the Environment and Gender Index (EGI)*. Retrieved from [here](#).
- IUCN, EGI, ENERGIA and USAID (2017). *Energizing Equality: The importance of integrating gender equality principles in national energy policies and frameworks*. Available [here](#).
- Modi, K., Schoenberg, J., & Salmodn, K. (2012). *Generation STEM: What girls say about science, technology, engineering, and math*. Produced for Girl Scout Research Institute.
- Rojas, A., Prebble, M. & Siles, J. (2015). Flipping the switch: Ensuring the energy sector is sustainable and gender-responsive. In L. Aguilar, M. Granat, & C. Owren (Authors), *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA.
- SNV. (2015). Women in Dong Hoi reap initial benefits from ADB-funded climate change mitigation initiatives.
- Woetzel, J. et al (2015). *The power of parity: How advancing women's equality can add \$12 trillion to global growth*. McKinsey Global Institute. Available [here](#).
- USAID. (2017). Integrating Gender Equality and Female Empowerment in USAID's Program Cycle. Operational Policy (ADS) Chapter 205. Available [here](#).
- World Economic Forum. (2016). *The industry gender gap*. Women and Work in the Fourth Industrial Revolution, Chart on Gender wage gap and women's participation by industry, p. 4. Available [here](#).

WEBSITES

- Barefoot College: <http://www.barefootcollege.org/>
- Grameen Shakti: <http://www.gshakti.org/>
- Empowerwomen: <http://www.empowerwomen.org/en>
- ENERGIA: <http://energia.org/>
- IUCN Gender and Renewable Energy (G-REEN) Platform: <http://genderandenvironment.org/energy/>
- Kopernik: <https://www.kopernik.ngo/page/wonder-women-indonesia>
- POWERful Women: <http://www.powerfulwomen.org.uk/>
- Solar Sister: <https://www.solarsister.org/>
- USAID Engendering Utilities: <https://www.usaid.gov/energy/publications/engendering-utilities>
- VOCTEC: <http://voctec.asu.edu>
- Women of Wind Energy: <http://www.womenofwindenergy.org/>
- Women in Sustainability, Environment and Renewable Energy: <http://www.masdar.ae/en/intiatives/wiser>

VIDEOS AND WEBINARS

- IUCN GGO. (2017). *Increasing girls' and young women's interest in STEM and the energy sector*. GECCO Webinar. Available [here](#).
- IUCN GGO. (2017). *Fomentar la participación de las mujeres en el sector energético*. GECCO Webinar. Available [here](#).
- WRISE. (2017). *Find her keep her: Recruiting and retaining women across renewable energy*. WRISE Webinar. Available [here](#).
- IUCN GGO. (2015). *Women working in the energy sector: why are there so few?* Presentation by Kristen Graf. Gender equality in the energy sector: Understanding how renewable energy contributes to empowerment. Available [here](#).
- IUCN GGO. (2015). *Challenges and strategies to increase and retain women's participation in the energy sector*, GECCO webinar. Available [here](#).

- i. Woetzel, J. et al (2015). *The power of parity: How advancing women's equality can add \$12 trillion to global growth*. McKinsey Global Institute. At: http://www.mckinsey.com/~media/McKinsey/Global%20Themes/Employment%20and%20Growth/How%20advancing%20womens%20equality%20can%20add%2012%20trillion%20to%20global%20growth/MGI%20Power%20of%20parity_Executive%20summary_September%202015.ashx
- ii. Carter, N.M. & Wagner, H.M. (2011). *The bottom line: Corporate performance and women's representation on boards (2004-2008)*. Catalyst. At: http://www.catalyst.org/system/files/the_bottom_line_corporate_performance_and_women%27s_representation_on_boards_%282004-2008%29.pdf
- iii. Grogan, L. & Sadanand, A. (2013). Rural electrification and employment in poor countries: Evidence from Nicaragua. *World Development* (43) pp. 252-265. At: <http://www.sciencedirect.com/science/article/pii/S0305750X1200215X>
- iv. Personal communication, Siana Teelucksingh, Clinton Foundation, June 2016.
- v. McElhane, Kellie A. & Mobasseri, Sanaz. (2012). *Women Create a Sustainable Future*. UC Berkeley Haas School of Business. At: http://www.haas.berkeley.edu/groups/online_marketing/facultyCV/papers/Women_Create_Sustainable_Value_FINAL_10_2012
- vi. IRENA. (2011). *IRENA working paper: Renewable energy jobs: Status, prospects and policies*. At: <http://www.irena.org/documentdownloads/publications/renewableenergyjobs.pdf>
- vii. IRENA. (2017). *Renewable energy and jobs: Annual Review 2017*. At: http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Jobs_Annual_Review_2017.pdf
- viii. EY. (2016). *Women in power and utility index 2015*. <http://www.ey.com/Publication/vwLUAssets/EY-women-in-power-and-utilities-index-2015/%24FILE/EY-women-in-power-and-utilities-index-2015.pdf>
- ix. IUCN. (2015). *Women in environmental decision making: New research from the Environment and Gender Index (EGI)*. At: https://portals.iucn.org/union/sites/union/files/doc/egi_factsheet_decision_making_web_sept2015.pdf
- x. EY. (2016). *Women in power and utility index 2015*. <http://www.ey.com/Publication/vwLUAssets/EY-women-in-power-and-utilities-index-2015/%24FILE/EY-women-in-power-and-utilities-index-2015.pdf>
- xi. World Economic Forum. (2016). *The Industry gender gap. Women and Work in the Fourth Industrial Revolution*, Chart on Gender wage gap and women's participation by industry, p. 4. At: http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_GenderGap.pdf
- xii. USAID. (2016). *Engendering Utilities: Improving Gender Diversity in Power Sector Utilities*. At: <https://www.usaid.gov/sites/default/files/documents/1865/Engendering-Utilities.pdf>
- xiii. IRENA. (2016). *Renewable energy and jobs: Annual Review 2016*. At: http://www.irena.org/DocumentDownloads/Publications/IRENA_RE_Jobs_Annual_Review_2016.pdf
- xiv. *ibid.*
- xv. Rojas, A., Prebble, M. & Siles, J. (2015). Flipping the switch: Ensuring the energy sector is sustainable and gender-responsive. In L. Aguilar, M. Granat, & C. Owren (Authors), *Roots for the future: The landscape and way forward on gender and climate change*. Washington, DC: IUCN & GGCA. At: https://portals.iucn.org/union/sites/union/files/doc/rftf_2015_chapter_4.1.pdf
- xvi. USAID. (2017). *Integrating Gender Equality and Female Empowerment in USAID's Program Cycle*. Operational Policy (ADS) Chapter 205. At: <https://www.usaid.gov/sites/default/files/documents/1870/205.pdf>
- xvii. Prebble, M., & Rojas, A. (2017). *Energizing equality. the importance of integrating gender equality principles in national energy policies and frameworks*. IUCN Global Gender Office. At: <http://genderandenvironment.org/resource/energizing-equality-the-importance-of-integrating-gender-equality-principles-in-national-energy-policies-and-frameworks/>
- xviii. *ibid.*
- xix. Modi, K., Schoenberg, J., & Salmodn, K. (2012). *Generation STEM: What girls say about science, technology, engineering, and math*. Produced for Girl Scout Research Institute. At: http://www.girlscouts.org/content/dam/girlscouts-gsusa/forms-and-documents/about-girl-scouts/research/generation_stem_full_report.pdf
- xx. European Institute for Gender Equality (EIGE). (2012) *Review of the Implementation in the EU of area K of the Beijing Platform for Action: Women and the Environment Gender Equality and Climate Change*. Report. European Union. At: <http://eige.europa.eu/sites/default/files/documents/Gender-Equality-and-Climate-Change-Report.pdf>
- xxi. *ibid.*
- xxii. Rojas, A.V., Siles, J. (2014). *Guía sobre Genero y Energia para Capacitadoras(es) y Gestoras(es) de Politicas Publicas y Proyectos*. ENERGIA, OLADE and IUCN. At: <https://portals.iucn.org/library/sites/library/files/documents/2014-061.pdf>
- xxiii. *ibid.*
- xxiv. *ibid.*
- xxv. GE Renewable Energy. (2016). *Women brush prejudice aside at Saint-Nazaire*. Blog. May 11, 2016. At: <https://www.gerenewableenergy.com/stories/saint-nazaire-women.html>
- xxvi. *ibid.*
- xxvii. *ibid.*
- xxviii. Guarezi, M.H. (2012). *Equidad de Genero en la ITAIPU Binacional*. Primer Foro Regional de Empresas por la Igualdad. August 28th-29th 2012. Mexico City. Mexico.
- xxix. VOCTEC. At: <http://voctec.asu.edu/>
- xxx. ASU. (n.d.) *Vocational training & education for clean energy (VOCTEC)*. Brochure.
- xxxi. *Women in Sustainability, Environment and Renewable Energy*. At: <http://www.masdar.ae/en/initiatives/detail/women-in-sustainability-environment-and-renewable-energy>
- xxxii. Kopernik. At: <https://www.kopernik.ngo/page/wonder-women-indonesia>
- xxxiii. Solar Sister. At: <https://www.solarsister.org/>
- xxxiv. Winrock International. At: <https://www.winrock.org/training-trainers-to-empower-cookstove-entrepreneurs/>
- xxxv. The Global Alliance for Clean Cookstoves (2015). *Understanding Impacts of Women's Engagement in the Improved Cookstove Value Chain in Kenya*. At: <http://cleancookstoves.org/about/news/05-04-2015-study-shows-women-cookstove-sellers-outsell-men-3-to-1.html>
- xxxvi. Biogas Sector Partnership Nepal (BSP). (2009). *Gender mainstreaming in the biogas support programme*, Nepal. ENERGIA. At: <http://megaslides.com/doc/1206059/gender-mainstreaming-in-the-biogas-program>
- xxxvii. SNV. (2015). *Women in Dong Hoi reap initial benefits from ADB-funded climate change mitigation initiatives*. At: <http://www.snv.org/project/harnessing-climate-change-mitigation-initiatives-benefit-women>
- xxxviii. Barefoot College. At: <http://www.barefootcollege.org/>
- xxxix. Grameen Shakti. At: <http://www.gshakti.org/>

This brief is included in the AGENT Thematic Energy Brief Series. It was prepared by IUCN with the support of USAID. The accompanying briefs and more information can be found at <http://genderandenvironment.org/energy/>.



JAKE LYELL | ALAMY

IUCN GLOBAL GENDER OFFICE

Lorena Aguilar, Global Senior Gender Adviser
1630 Connecticut Ave. NW, Suite 300
Washington, DC 20009
202-387-4826
globalgenderoffice@iucn.org

USAID

Corinne Hart, Senior Advisor for Gender
and Environment
Office for Gender Equality and
Women's Empowerment
202-712-4030
cohart@usaid.gov

The information provided in this report is not official U.S. Government information and does not represent the views or positions of the U.S. Agency for International Development or the U.S. Government.