Energy and Economic Growth
Applied Research Programme

A snapshot of gender opportunities and constraints in the large-scale electricity sector

EEG Energy Insight

The empirical evidence base for understanding the gendered impacts of energy projects, at all levels of the sector and throughout the entire value chain, is comparatively small. This Energy Insight seeks to provide an overview of the types of research being conducted in the upstream part of the sector, highlight programmatic trends, and identify upcoming studies that will provide data to help the sector develop best practices for implementers and policymakers.

Pamela Baldinger

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Introduction

The benefits of modern energy to human and economic development are indisputable, as are the benefits to reducing inequities between men and women, boys and girls. Indeed, Sustainable Development Goals 5 and 7, respectively, aim to achieve gender equality and universal energy access. With the launch of major international initiatives such as Sustainable Energy for All and Power Africa focused on eliminating energy poverty, the international development community and many governments are focusing greater attention on the gender–energy nexus to fill important knowledge gaps on how the two goals might complement each other or, at a minimum, to ensure that efforts to increase energy access do not disadvantage one gender relative to the other.

Despite a growing body of data, the empirical evidence base for understanding the gendered impacts of energy projects, at all levels of the sector and throughout the entire value chain, is still comparatively small. The bulk of the existing data comes from rural electrification or 'last-mile' initiatives that address household-level cooking and lighting initiatives, as well as female entrepreneurship activities similarly focusing on last-mile distribution or smallholder farmers. Efforts to better understand the links between gender and larger-scale projects focusing on the electric grid (i.e. utility-scale generation, transmission and distribution, and the associated governance structures) are fewer in number and the data gaps are even larger.

This Energy Insight seeks to provide an overview of the types of research being conducted in the upstream part of the sector, highlight programmatic trends, and identify upcoming reports and studies that will provide data to help the sector develop best practices for implementers and policymakers.

Isn't the energy sector gender neutral?

Historically, the development of electricity sector policy has been gender blind; the focus has been on technical parameters, governance, and cost. Such an approach, however, fails to recognise that electricity projects are implemented in specific socio-cultural contexts that almost always have gender inequities. To quote the European Commission, 'policy decisions that appear gender neutral may have a differential impact on women and men, even when such an effect was neither intended nor envisaged'[1].

Failure to recognise the significance of gender in the power sector has resulted in the lack of gender-disaggregated energy data at both national and project levels. The Energy Progress Report for Sustainable Development Goal 7, for example, receives inputs from more than 20 international organisations, including the International Energy Agency, but has no breakdown for gender (it provides the overall proportion of a population with access to electricity and clean cooking).

This situation exists even though major funders have required for many years that gender and social inclusion considerations be integrated into energy infrastructure projects. Adherence to such policies has been spotty, however, and the quality of the work has varied significantly. Nonetheless, groups such as Energia, an international network on gender and sustainable energy, and the World Bank's Energy Sector Management Assistance Program (ESMAP), have compiled considerable resources on gender and energy. They, along with other agencies and NGOs, have generated enough research over the past 20 years that we now understand some of the key gender–energy linkages as they apply to the large-scale electricity sector. These are summarised in the box below, along with general descriptions of illustrative activities that can be developed as part of a gender-responsive approach.

[1] European Commission: *A Guide to Gender Impact Assessment'*, 1999

Gender–energy linkages in the large-scale electricity sector

Gender disparity	Illustrative programmatic response
Men and women may have different energy needs due to intra-household dynamics (especially time spent on household chores) and socio-cultural factors. The impacts of electrification on men and women, therefore, may vary considerably, as might priorities for use of electricity	• Consult with men and women on priorities/needs; introduce new products to meet gendered needs • Evaluate electrification impacts, disaggregated by gender
Women typically manage household energy use, although they may not have control over household finances nor have title to household property. They are also less likely to migrate for work	• Conduct household surveys and focus groups to understand household dynamics • Educate women about electricity usage and conservation/electrical devices • Consider ways to register electric infrastructure in the names of both the male and female heads of household • Explore appropriate ways to involve women in bill payment and collection • Explore ways to involve women in public outreach and communications
Women often have less access to resources, education, and information than men, as well as greater restrictions on mobility. These factors can negatively impact their ability to participate in decision-making processes and seek employment opportunities outside the home	• Target outreach and marketing for women, especially in rural areas • Hold consultation and marketing events at times/locations convenient and safe for women; consider providing transportation
Female-headed households occupy a disproportionate percentage of low-income households, and have greater difficulty obtaining credit/financing than male-headed households	• Conduct willingness-to-pay surveys (disaggregated by gender) • Develop appropriate financing options for grid connections for the poor, etc. • Provide financial literacy education • Target tariffs and subsidies to provide a safety net • Provide financing options for women-owned businesses
Large-scale electricity infrastructure development may provide employment opportunities in construction and STEM fields (science, technology, engineering, maths) but these are sectors in which women are under-represented globally	• Provide scholarships and internships for women • Conduct youth outreach that includes/encourages participation of girls—energy clubs in schools, etc. • Generate positive communications highlighting female role models and their contributions
Large-scale infrastructure projects can affect land prices and labour markets, with the potential for gender-differentiated impacts. Women may be at greater risk of gender-based violence and HIV due to large-scale migration, or receive inadequate compensation in cases of resettlement due to lack of property rights and/or unregistered micro-businesses	• Conduct gender-inclusive public consultations • Develop gender-equitable compensation decision processes and strategies (e.g. joint land titling) • Conduct targeted outreach initiatives (e.g. health risk management, gender-based violence, etc.) • Develop targets for women's employment and/or ancillary services; ensure accountability[2]
Globally, the power sector is male-dominated at all levels, including within energy ministries, electricity	• Institute gender targets and/or quotas; public disclosure of board/staff composition

[2] World Bank: *Getting to Gender Equality in Energy Infrastructure*, 2018

regulatory bodies, utilities, and other service providers. Moreover, 29 countries have laws preventing women from working in specific jobs in the energy sector	• Remove discriminatory labour laws • Provide mentoring and leadership training for women at least equivalent to that for men • Diversify recruitment strategies • Implement change management training/assistance to prevent backlash to gender initiatives

While we know that failure to recognise and address gender disparities early on in a project's design can negatively impact our ability to attain desired development objectives and project outcomes, what we do not know are the most effective ways to implement the types of activities listed in the second column above. There is need for greater evidence on the impacts of different gender-related interventions in order to justify spending decisions, especially in larger-scale projects.

Common approaches and challenges to integrating gender into energy projects

Virtually all international donors, some governments, and many large non-profit organisations themselves conduct, or require their grantees to conduct, a gender analysis or gender audit during the project design or preparation stage to examine existing gender norms and inequities in the project focus area. Templates for conducting such analyses can be found online on the Energia and ESMAP websites, while a new web-based app has just been launched by equilo (www.equilo.org/). The developer claims the app can produce customised gender analyses and action plans in a time- and cost-effective manner for over 20 sectors, including clean energy.

The audit is then used to identify a gender plan or strategy with concrete objectives and activities, and associated indicators that allow gender-disaggregated data. The activities and indicators are then monitored, and perhaps evaluated. Whether the project is focused specifically on gender outcomes or gender is being mainstreamed into a broader energy project, the process is the same; however, the scope of activities to be implemented and monitored during implementation may differ significantly. ESMAP's new study *Getting to Gender Equality in Energy Infrastructure* lists a practical hierarchy for considering gender entry points in electricity infrastructure projects: (i) do no harm; (ii) achieve the project objective; and (iii) seek opportunities to improve gender equity.

While the process for determining the entry points for gender-responsive programming may seem straightforward, implementation has proven challenging for several reasons:

Lack of expertise at all levels: many entities lack the expertise to design and/or conduct the gender analysis. Interviews with numerous energy programme managers reveal that many gender experts, however, lack the ability to craft actionable plans at the operational level. Many managers claimed that the gender analysis/action plans contained advice or strategies that were too generic or high level, or lacked insight into how local stakeholders (such as utilities) operate, and thus were not credible.

Lack of funding: adding gender components to energy projects or increasing the capacity of energy institutions to analyse and implement gender-sensitive operations requires more work and the addition of team members with requisite skills. These team members must be hired externally or internal staff must be trained, which takes time and money.

Lack of institutional support: ensuring that time and resources are committed to developing a gender strategy requires institutional support, while ensuring that the strategy is actually implemented once developed, and that staff are held accountable for results, requires committed leadership. Resistance may come from various quarters for various reasons. Because the large-scale electricity sector is highly regulated and corporate institutional structures can be complicated, proposed changes at a company level may require approval from the government or parliament, the CEO and/or board of directors, and/or the labour union. Smaller companies or those operating downstream may be more flexible, but bureaucratic obstacles can still be significant.

Is there a business case for integrating gender concerns into large-scale energy projects?

Lack of institutional support for applying a gender lens to energy projects may stem from lack of awareness, lack of capacity to implement changes, or the belief that the issue is simply irrelevant or too minor in comparison to more pressing issues. Moreover, in the economies that have unbundled their power sectors, creating separate generation, transmission, and distribution companies, many key stakeholders have little or no direct contact with households. When an institution's main interaction is with other businesses, as opposed to individuals, it may perceive there to be no utility in examining gender issues.

For that reason, many of the projects seeking to address gender concerns in the large-scale power sector are seeking to link gender responsiveness to business performance to increase the willingness of utilities and others to participate. Few if any projects are seeking to prove that gender diversity or responsiveness will directly impact the bottom line; the metrics are more commonly tied to specific performance-related indicators such as lower employee turnover or meeting corporate and government mandates, etc.

This emphasis on business performance is in part inspired by a growing number of studies showing an *association* (not causation) between workforce/board diversity and business success. For instance, in a 2014 survey of 21,980 firms in 91 countries, the Peterson Institute for International Economics found that nearly a third of the companies had no women in either board or C-suite positions, 60% had no female board members, 50% had no female top executives, and fewer than 5% had a female CEO. In this study, the presence of more female leaders in top positions of corporate management correlated with increased profitability.

Ernst & Young's *Women in Power and Utilities Index 2016* analysed the top 200 utilities globally in terms of revenue and found similarly low levels of women in leadership jobs: women held less than 20% of board and senior management positions. However, utilities are major employers in many countries and it would be empowering for women to have equal access to employment and promotion opportunities. Prevailing social attitudes, labour laws (especially regarding maternity leave and gender quotas), labour market characteristics, corporate culture and policies, and corporate workforce demographics can all influence the composition of any energy institution's workforce. Therefore, regardless of whether an energy institution seeks to increase female participation in the workforce for political, social, or commercial reasons, the gender analysis will need to examine all these factors.

What are the current trends in gender–energy programming?

Gender mainstreaming efforts can make it difficult to identify trends in gender–energy funding and research, as gender components are embedded in larger projects and may not be reported upon or flagged by keyword in project documents. This is especially the case for work related to project siting, construction, and resettlement. It is possible, however, to identify several themes prevailing in gender-specific energy interventions. These include: gender in energy policy; women as customers; women's entrepreneurship and participation in the energy supply chain; and women in the energy workforce. Consultation and capacity building are cross-cutting themes of each workstream. A brief description of each stream follows.

1) Gender in energy policy

Awareness of the need for gender responsiveness in the energy sector does not always translate into policy frameworks or actionable work agendas. For example, the International Union for the Conservation of Nature (IUCN) published a study in 2017 that examined 192 national energy frameworks from 137 countries, and discovered only around one-third of the frameworks included gender considerations. Nearly all the frameworks incorporating gender came from developing countries (especially in sub-Saharan Africa) and addressed such issues as time poverty, energy access, and women's health and wellbeing. Energy frameworks from developed countries (where access is not an issue), in contrast, focused on encouraging opportunities for women in energy technology and innovation.

To strengthen the capacity of governments to apply a gender lens to the energy sector, Power Africa, together with the Austrian and Spanish development agencies, has provided support to the Economic Community of West African States (ECOWAS) Centre for Renewable Energy and Energy Efficiency (ECREEE) to develop a policy framework for gender integration in energy projects. The ECOWAS Policy for Gender Mainstreaming in Energy Access was adopted by the ECOWAS heads of state in June 2017, and ECREEE is now working with member governments and institutions to build capacity to implement the policy in order to:

- ensure that the specific interests of women and men, as stakeholders, are taken into account in the development of projects;
- ensure that any potential adverse and discriminatory impacts on women or men deriving from projects are recognised and avoided or mitigated to the extent feasible;
- improve transparency in the planning and implementation processes to promote and increase the participation and capacity of women and men, including but not limited to customers, employees, managers, investors, officials, and other stakeholders; and
- encourage the development of harmonised policy and legal regulatory frameworks in each Member State and for ECOWAS institutions that are consistent with the principles of the policy.

Power Africa is now trying to establish similar frameworks with partners in southern and east Africa.

Regulators play a key role in the electricity sector, but generally are not familiar with gender issues and how their decisions may have gender impacts. The United States Agency for International Development (USAID) has funded the National Association of Regulatory Utility Commissioners to develop a *Practical Guide on Women in Energy Regulation*, which is expected to be completed summer 2018. The guide is designed to be a tool for regulators that outlines best practices for policy and regulatory reforms to enhance the inclusion of women in the energy regulator workforce, as well as developing policy considerations that are gender inclusive.

2) Women as consumers of electricity and electric products/services

Most gender projects in the energy sector focus on women, as they tend to have greater constraints and face more institutional and socio-cultural barriers to participation than their male counterparts. However, viewing women as perpetually disadvantaged can result in businesses and planners failing to recognise the potential women can play as business drivers and social agents of change in the sector.

With the exception of cookstove businesses, most energy companies throughout the value chain tend to employ ungendered marketing and communications strategies that often contain implicit gender biases. It is not uncommon for electric distribution companies, especially those that are highly indebted, to have inadequate data management systems and know little about their customers; in some cases they cannot even identify all of their customers in order to bill them.

Many energy sector projects along the value chain, therefore, are incorporating components designed to help utilities and businesses better understand potential customer groups (including women) and to target products, as well as financing mechanisms, accordingly. Because such efforts are typically embedded in larger projects, however, it can be difficult to obtain primary data on the effectiveness of particular tactics; much of the information available is contained in case studies, and much of it is anecdotal.

Loss reduction and customer regularisation in peri-urban areas, which is a challenge for many utilities in fast-growing urban areas of developing countries, is one example of an area in which distribution companies may benefit by better understanding the gendered roles of residents. Because women are the primary managers and users of household energy, they must be included in any conversations about electricity usage. Several case studies conducted by USAID in its study *Innovative Approaches to Slum Electrification* revealed that many utilities work with community groups to build trust in peri-urban areas, and that these groups in turn relied on women to interface with residents, educating them about electricity costs, energy conservation, and other measures. Women were perceived to

'communicate more easily than men, be more familiar with the neighborhood, and pose little threat to consumers'. ESMAP is currently working on a report on the linkages between gender and energy efficiency, which should be completed in summer 2018.

3) Women's entrepreneurship and the energy supply chain

Most work on women's entrepreneurship in the energy sector has focused on micro-entrepreneurs working in the off-grid or cooking parts of the value chain but, even there, data gaps exist and best practices remain elusive. The United Nations initiative Sustainable Energy for All is leading a large effort to collect data and mobilise funding for women's entrepreneurship activities, with an emphasis on energy access. Energia, with support from the UK Department for International Development (DFID), is conducting a literature review on what is currently known about gender and entrepreneurship in the energy sector. The primary objectives of the study will be to elucidate the key business and behavioural drivers of success of women's involvement in energy-based enterprises, to examine the role of the private sector and market-based approaches in scaling energy access, and to identify current innovations available to strengthen women's agency and economic empowerment associated with energy businesses. The study should be completed by the end of 2018.

The International Renewable Energy Agency (IRENA), which produces annual reports on employment in renewable energy, is also doing research on women in the energy supply chain. IRENA estimates that women constitute 20–25% of the workforce in renewable energy companies. This is greater than in the traditional energy sector, but still lower than is the case in the broader economy. Although more women seem to work in technical positions and hold management positions in renewable companies, the majority work in administrative positions. IRENA plans to present new analysis of the gender dimension of employment impacts among local rural communities affected by large-scale renewable energy project development later this year. The study will analyse primary data from solar and wind projects being developed across sub-Saharan Africa.

4) Women in the energy workforce

Ernst & Young's *Women in Power and Utilities Index*, referred to previously, found that in 2016 women accounted for just 5% of executive board members, 16% of overall board members, and 14% of senior management positions. A study of 14 utilities in developing countries conducted by USAID's Engendering Utilities project found women constituted on average 13% of the workforce, with a range of less than 1% in Pakistan to more than 30% in Ukraine.

These surveys also showed high degrees of gender segregation within the utilities, a finding reported in surveys in the oil and gas sector as well. Women tended to be concentrated in administrative departments such as customer service, legal, HR, and finance; on the contrary, technical departments, which constitute the bulk of personnel and control most of the business assets, remain overwhelmingly dominated by men.

Agencies such as USAID, the Millennium Challenge Corporation, the African Development Bank, and the World Bank all have programmes working to increase career opportunities for women in private and public sector electricity-related entities, and/or to increase the number of girls and women seeking education and employment opportunities in STEM fields, including energy. Workforce issues are an obvious entry point for gender work in the large-scale sector, as the activities can be tailored to individual entities that see the potential for direct benefits such as increased talent pools of potential recruits, higher employee satisfaction and reduced turnover, and improved corporate image and corporate social responsibility tactics.

Types of interventions, with sample activities, include:

- Attracting qualified women – diversifying recruitment practices and corporate communications, providing internships
- Capacity building and networking for existing female employees – creating employee resource groups, sponsoring conferences and events
- Improving promotion paths for female employees – providing leadership training and mentoring, instituting gender targets in succession plans

The Swiss-based EDGE Certified Foundation has developed a global business certification standard for gender equality (the EDGE certification), and the United Nations Development Programme has developed a comparable Gender Equality Seal certification process to help companies develop efficient and equitable workplaces. Though comprehensive, the certification process for both programmes is proprietary, and includes costs for external auditors and to maintain the certification.

Few energy companies from developing countries have obtained either certification. Recognising the need for a more accessible product, the Engendering Utilities project is working on a Gender Equity Best Practices benchmarking tool for HR that is designed to help utilities conduct a gap analysis of their HR policies and practices throughout the employee lifecycle. The tool should be publicly available by October 2018.

Conclusion

Although 'soft' issues like gender often get short-shrift in the electricity sector, many entities are beginning to test ingrained gender assumptions and develop innovative gender programmes and approaches that can have positive impacts on project outcomes and development goals. The Energy and Economic Growth (EEG) project's cross-cutting themes afford many opportunities to bring gender and energy experts together to conduct research that can grow the knowledge base of how gendered approaches can help policymakers build more sustainable, equitable energy systems. In particular, the programme is looking to address questions around what the gendered impacts of different energy interventions are and how gender influences the governance of energy systems. One of the state of knowledge papers (or review papers) from year one by Harold Wilhite reviewed and consolidated both theory and findings on the gender consequences of energy access in low-income countries. The paper is available to download here.

References and further reading

Energia (2016) *Mainstreaming Gender in Energy Sector Practice and Policy*

Ernst & Young (2016) *Women in Power & Utilities Index 2016*

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About the author: Pamela Baldinger is an international development and business specialist with over 15 years of experience in the design and management of energy projects. As Senior Energy Adviser at USAID, she managed numerous energy access, renewable energy, and gender projects. She authored the Energy Division's Gender Strategy, managed the *Empowered Entrepreneur Training Program* and the Agency's premier gender and infrastructure project *Engendering Utilities*, and developed energy access projects that integrated over 1,000 women into the clean energy supply chain. She served as the Agency Coordinator for the US Government's commitment to bolster adoption of clean cooking technologies in conjunction with the Global Alliance for Clean Cookstoves, and led the development of new finance facilities and revolving funds to address energy financing constraints for consumers and energy enterprises. She has consulted for the World Bank and Woodrow Wilson International Center for Scholars, and lectured at the US State Department's Foreign Service Institute.

About EEG: The goal of the DFID-funded EEG programme is to build a body of evidence around how sector reforms, innovative technologies, and practicable actions can be used to help maximise the economic impacts of larger-scale energy projects to bring the benefits of modern energy services to poorer people. EEG's Applied Research Programme produces cutting-edge research on the links between energy and economic growth, working closely with policymakers in sub-Saharan Africa and South Asia to build more sustainable, efficient, reliable, and equitable energy systems. EEG seeks to build a body of evidence around how sector reforms, innovative technologies, and practicable actions can be used to help maximise the economic impacts of larger-scale energy projects and bring the benefits of modern energy services to poorer people. With regard to gender, the programme is looking to address questions around what the gendered impacts of different energy interventions are and how gender influences the governance of energy systems. One of the state of knowledge papers (or review papers) from year one by Harold Wilhite reviewed and consolidated both theory and findings on the gender consequences of energy access in low-income countries. The paper is available to download here.

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