



PRACTICAL GUIDE TO WOMEN IN ENERGY REGULATION



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PRACTICAL GUIDE TO WOMEN IN ENERGY REGULATION

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HOW TO USE THIS GUIDE

This guide was developed to support energy regulators in low- and middle-income countries in promoting gender equality. The document focuses on the inclusion of women in multiple facets of energy regulation, including employment, energy regulatory policy, and energy infrastructure projects. In its first section, the guide provides an overview of the energy regulatory frameworks and opportunities to advance gender equality within the energy regulatory sector. The subsequent sections describe a series of barriers to gender equality in energy regulation and focus on strategies for better integrating women into (1) employment in energy regulatory fields, (2) the creation and implementation of regulatory policy, and (3) the development of energy infrastructure. Each of these three chapters outlines challenges women face within energy regulation, and details solutions through case studies and from best practices around the world. For regulators with an interest in one of the above topics, each of these chapters can be read as stand-alone documents.

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SECTION I EXECUTIVE SUMMARY

Through its international work, the National Association of Regulatory Utility Commissioners (NARUC) has observed disproportionately low levels of participation by women in energy regulation and the need for a resource that can inform and provide guidance to energy regulators on gender equality. To meet this need, the Practical Guide to Women in Energy Regulation introduces concepts of gender equality in energy regulation and details a menu of strategies for regulators to improve gender equality within their areas of influence and jurisdiction. The guidance is accompanied by examples from countries worldwide and several case studies to explore strategies in practice.

This guide provides an overview of the current role of women within the energy sector. Drawing from available literature, it identifies approaches to gender equity that consider women as employees, decision-makers and stakeholders, energy users, and participants in the energy value chain. Equity and equality are interrelated terms. Throughout this guide, the focus will be on gender equity, which is an essential step to gender equality.

Research has demonstrated that gender-diverse workforces are good business practice and that gender equity in energy regulation improves economic prosperity for all citizens (Economic Community of West African States [ECOWAS], 2016). Moreover, increased participation by women in the energy regulatory sector ensures fair representation and advances the UN Women’s Empowerment Principles (UN Global Compact & UN Development Fund for Women, n.d.) (see Figure 1).

Figure 1: Why Gender Equity Matters in Energy Regulation



Findings from research, expert interviews, and case studies point to the need for the energy regulatory sector to take assertive steps toward inclusivity for women. Women participate in the energy sector as energy users, employees, participants in the energy value chain, and as decision-makers and stakeholders. These roles intersect with many areas over which energy regulators have jurisdiction, including tariff-setting, licensing, interconnection, ensuring reliability, procurement, rural electrification, stakeholder engagement, and internal human resource policies. Regulators can use these areas of jurisdiction to empower and support women as employees and policy-makers, consider gender-differentiated impacts of regulatory policy and energy decisions on energy users, and identify ways to minimize negative impacts from infrastructure projects and help direct those projects to improve the livelihoods of vulnerable populations.

INTERVENTIONS FOR ENERGY REGULATORS

There are three key entry points for regulators to improve gender equity: (1) employment, (2) energy policy and regulation, and (3) infrastructure development. Decisions made around each of these topics can have distinct implications for and impacts on women. An overview of the three topic areas, main barriers to gender equity, and recommended strategies is provided in Table I.

Table I: Overview of the Practical Guide to Women in Energy Regulation

Topic	Barriers	Identified Strategies
<p>Employment: <i>The employment and advancement of women in the energy regulatory sector</i></p>	<ul style="list-style-type: none"> • Cultural and social norms • Discrimination • Lack of education and training opportunities • Lack of gender-responsive policies and benefits • Lack of antidiscrimination protections 	<ul style="list-style-type: none"> • Implement antidiscrimination policies • Offer gender-sensitive benefits • Provide continuing education and training opportunities • Provide gender awareness trainings and resources • Track gender-disaggregated employment data • Use a quota hiring system or other hiring approaches to reduce gender bias
<p>Energy Policy and Regulation: <i>Impacts on women from regulatory decisions such as tariff-setting and licensing</i></p>	<ul style="list-style-type: none"> • Existing vulnerabilities due to limited energy access • Limitations of influence on policy decisions • Limitations of national-level policy • Lack of gender-disaggregated data 	<ul style="list-style-type: none"> • Offer income-based tariffs and incentives • Link the energy sector to gender policies and regulations at the national level • Collect gender-disaggregated data to understand policy and regulatory impacts
<p>Infrastructure: <i>Impacts on women from energy infrastructure development and women's influence on decision-making processes as stakeholders</i></p>	<ul style="list-style-type: none"> • Gender-disparate uses of natural resources • Resettlement and compensation concerns • Health and safety • Existing socioeconomic constraints to participation • Employment opportunities 	<ul style="list-style-type: none"> • Transparent stakeholder engagement processes that consult women throughout the project planning and development process • Support capacity building for women • Monitor and evaluate for gender-specific impacts • Hire women as employees for projects • Create opportunities for women in procurement requirements • Require developers to implement health and safety services for communities • Issue joint land titles and compensation to both partners

SECTION 2 INTRODUCTION

2.1 PURPOSE OF THIS GUIDE

Half of the world's population identifies as women. Despite this, women are underrepresented within the energy sector on a worldwide basis (Ernst & Young, 2016) (Pearl-Martinez, 2014). The goal of the Practical Guide to Women in Energy Regulation is to support gender equity and equality in energy regulatory commissions and to improve policies and processes to further integrate women into energy decision-making, regulatory policy, and project design. The inclusion of women is important for many reasons, which include:

- **Gender-diverse workforces are good business practice.** Building organizations that provide inclusive roles for women introduces broader perspectives, solutions, and approaches to their work than organizations employing mainly men. A gender-diverse workforce pulls from a wider pool of talent and better represents an organization's customer base (Moodley, Holt, Leke & Desvaux, 2016). Research studies have cited improvements in metrics such as productivity and quality of work when there are higher percentages of women in the workplace (Moodley et al., 2016) (Noland, Moran, & Kotschwar, 2016).
- **Gender equity improves economic prosperity for all citizens.** Energy access plays an important role in the daily lives and the critical functions of society, and uneven access to reliable energy can depress economies. Female-headed households tend to be lower in income than those headed by males and therefore experience greater financial barriers to energy access. By ensuring that energy is accessible to women, energy regulators can minimize this uneven utilization and support local economies (ECOWAS, 2016).
- **Integrating women into the energy sector provides agency to women affected by energy decisions.** Ensuring that women are represented as decision-makers and stakeholders in regulatory organizations and within policy design can lead to more inclusive decision-making that better accounts for diverse perspectives. Gender-inclusive decision-making can also lead to more effective and broadly informed outcomes (Morris, 2015).
- **Gender-sensitive energy regulatory policies can improve policy outcomes for women.** Energy policies are often designed to be gender-blind. Integrating gender in energy regulatory policy design can help uncover disparate impacts of policies on men and women and lead to policies that mitigate those impacts. For example, in Guatemala, rural electrification led to a 9 percent increase of women in the labor force, while no similar trend was found for men, suggesting that the rural electrification policy and subsequent increased energy access benefited men and women differently (Köhlin, Sills, Pattanayak, & Wilfong, 2011).
- **Improving gender equity in energy regulation helps to advance the UN Human Rights Principle of Gender Equality.** Building equity for women in terms of representation as employees and leaders in regulatory organizations, as decision-makers in energy infrastructure projects, and as an important constituency to consider in regulatory policy design will all help move toward a place of gender equality in energy regulation. Improving gender equity in energy regulation can also help to ensure that regulatory commissions are supporting the United Nations Sustainable Development Goal of ensuring universal access to affordable, reliable, and modern energy services by 2030 (United Nations Development Programme, 2018b).

The Practical Guide to Women in Energy Regulation provides energy regulators with strategies to support gender equity and representation for women within the sector. This guide contains:

- An overview of women’s participation in energy regulation; and
- Analyses of three pathways for gender inclusion in the energy regulatory sector: (1) the workforce, (2) energy regulation, and (3) infrastructure. In each of these respective sections, the guide provides:
 - An overview of existing barriers and challenges to women participating within that facet of energy regulation;
 - A suite of strategies to more fully support gender equity, with illustrative examples; and
 - Case studies drawing from recent application of strategies to advance gender equity in energy regulation in different country contexts.

2.2 INTRODUCTION TO THE CASE STUDIES

The following case studies accompany each chapter within the guide. They describe relevant place-based examples developed via in-depth primary and secondary research. The case studies highlight key strategies and lessons learned from efforts to advance gender equity in energy regulatory commission employment, energy regulatory policy, and energy infrastructure.

Employment: Costa Rica

Private- and public-sector entities within Costa Rica’s energy sector have implemented a variety of national and organizational policies aimed at supporting women in the workforce. This includes enacting workplace policies, providing enhanced benefits, and implementing gender targets for boards of directors in private- and public-sector entities. This case study provides energy regulators with a glimpse into the motivations and interventions that have been used by energy regulators to support gender equity, and an overview of the continuing challenges and key factors for success of these initiatives.

Energy Regulatory Policy: Africa Spotlights

Energy regulatory commissions are at the early stages of integrating gender into their regulatory policies and practices in African countries. Some leading regulatory commissions in Africa have reviewed their gender-based approaches in terms of their internal employment and human resource policies, but have not yet looked at regulatory policy to evaluate potential differential policy impacts on men and women. The three spotlights included in the guide highlight early actions that governments and energy regulatory commissions are taking to integrate gender into their policies and highlight applicable examples from other analogous sectors, such as the water sector. The spotlights describe efforts and early results from Cabo Verde, Ghana, and Tanzania.

Energy Infrastructure: Lao People’s Democratic Republic (Lao PDR)

In recent years, Lao PDR has installed over 4,000 megawatts (MW) of hydropower projects throughout the basins within the country. While the country does not currently have an energy regulatory commission, key actors including the central government, hydropower developers, and domestic and international nongovernmental organizations (NGOs) have made strides to integrate gender equity into project planning and compensation and resettlement policies. This case study outlines Lao PDR’s national policies for hydropower development, key gender-equity strategies employed in several hydropower dam projects, their outcomes, remaining challenges, and takeaways. Many of the lessons learned from infrastructure development in Lao PDR

are applicable to other developing country contexts and include relevant lessons for energy regulators with approval and oversight jurisdiction over large energy infrastructure projects.

2.3 USE OF TERMS

The word “gender” refers to a cultural designation, which can include a range of gender identifications within its usage—applying to both women and men in many contexts. “Women” is a more specific term, referring to the female gender. This guide specifically is about women in the field of energy regulation. It does not focus on additional gender identities that the term “gender” encompasses.

Table 2: Term Definitions

Term	Definition
Gender	The economic, political, and cultural attributes and opportunities associated with being male or female. The social definitions of what it means to be male or female vary among cultures and change over time. (USAID ADS Chapters 200–203). Gender refers to the array of socially constructed roles and relationships, personality traits, attitudes, behaviors, values, and relative power and influence that society ascribes to the two sexes on a differential basis. Gender is an acquired identity that is learned, changes over time, and varies widely within and across cultures. Gender is relational and refers not simply to women or men, but to the relationship between them.
Gender-Blind	Person, policy, or institution that does not recognize that gender is an essential determinant of the life choices available to us in society.
Gender Analysis	A systematic approach, usually using social science methodologies, for examining problems, situations, projects, programs, and policies to identify the gender issues and impacts. There are a number of tools available for conducting gender analyses.
Gender Equality	Refers to the absence of discrimination, on the basis of a person’s sex, in the allocation of benefits or in access to services. Gender equality entails the concept that all human beings, both men and women, are free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles, or prejudices. Gender equality means that the different behaviors, aspirations, and needs of women and men are considered, valued, and favored equally. It does not mean that women and men have to become the same, but that their rights, responsibilities, and opportunities will not depend on whether they are born male or female. Inequality, discrimination, and differential treatment on the basis of sex can be structural.

Term	Definition
Gender Equity	Gender equity means fairness of treatment for women and men, according to their respective needs. This may include equal treatment or treatment that is different but considered equivalent in terms of rights, benefits, obligations, and opportunities. In the development context, a gender equity goal often requires built-in measures to compensate for the historical and social disadvantages of women. Specific measurements and monitoring are employed to ensure that, at a minimum, programs, policies, and projects implemented do not leave women worse off than men in their peer groups and families and that measures are taken to compensate for historical and social disadvantages.

Source: Definitions from USAID’s Gender Terminology Guide (USAID, 2007)

This guide provides an overview of the current role of women within the energy sector. Drawing from the literature, it identifies approaches to gender equity that consider women as employees, decision-makers and stakeholders, energy users, and participants in the energy value chain. The guide does not seek to perpetuate stereotypes that are sometimes used in the justification of women in these roles. Rather, the benefits identified rely on case examples with demonstrated qualitative and quantitative outcomes. The scope of the guide pertains to women in the energy regulatory sector. In identifying barriers and benefits to the engagement of women in the energy field, intersectional factors such as race, kinship, ethnicity, class, sexual orientation, and religion are not directly considered within this guide.

Equity and equality are interrelated terms. Throughout this guide, the focus will be on gender equity. Gender equity is defined as fairness in treatment of genders according to their needs, which can include an equitable distribution of the benefits and harms and fair inclusion in energy decision-making processes. Equity is an essential step toward equality. Gender equality is the absence of discrimination on the basis of a person’s sex in the allocation of energy benefits or in the access to energy services.

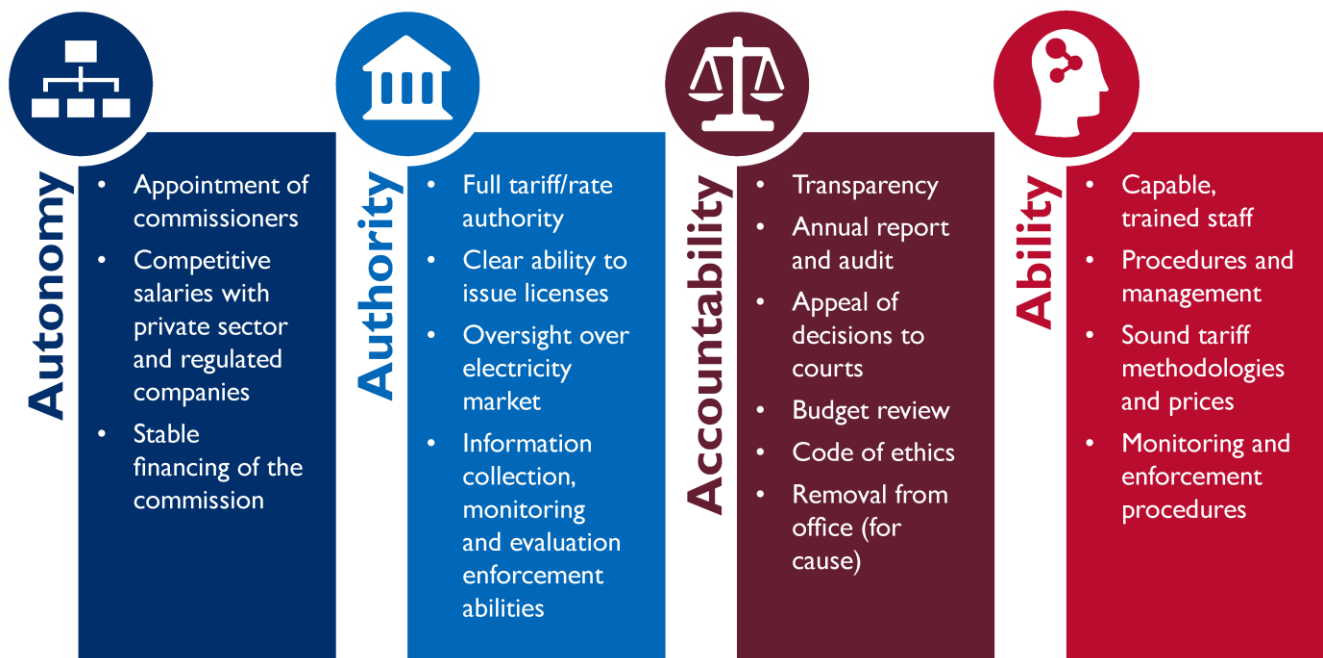
SECTION 3 GENDER EQUITY AND ENERGY REGULATION

3.1 THE ENERGY REGULATOR’S ROLE IN GENDER EQUITY

Energy regulatory authorities can implement regulatory frameworks that lead to harmonization of energy principles, tariff stability, greater collaboration among energy sector entities and consumers, and increased investment in the energy sector. To be effective in working toward these outcomes, regulators require specific core capacities, namely autonomy, authority, accountability, and ability (Archer, 2007).

While gender has historically been considered beyond the purview of regulatory authorities, existing gender disparities in the energy sector demonstrate a need for energy regulators to be more knowledgeable about the ways women interact with and are impacted by energy regulation (Köhlin et al., 2011) (Pearl-Martinez, 2014) (Prebble & Rojas, 2017). This guide identifies barriers for women to employment in energy regulatory commissions, to their inclusion in regulatory policy, and to their participation in energy infrastructure development. It also points to actions energy regulatory authorities can take based on their unique position in the energy sector and their core capacities.

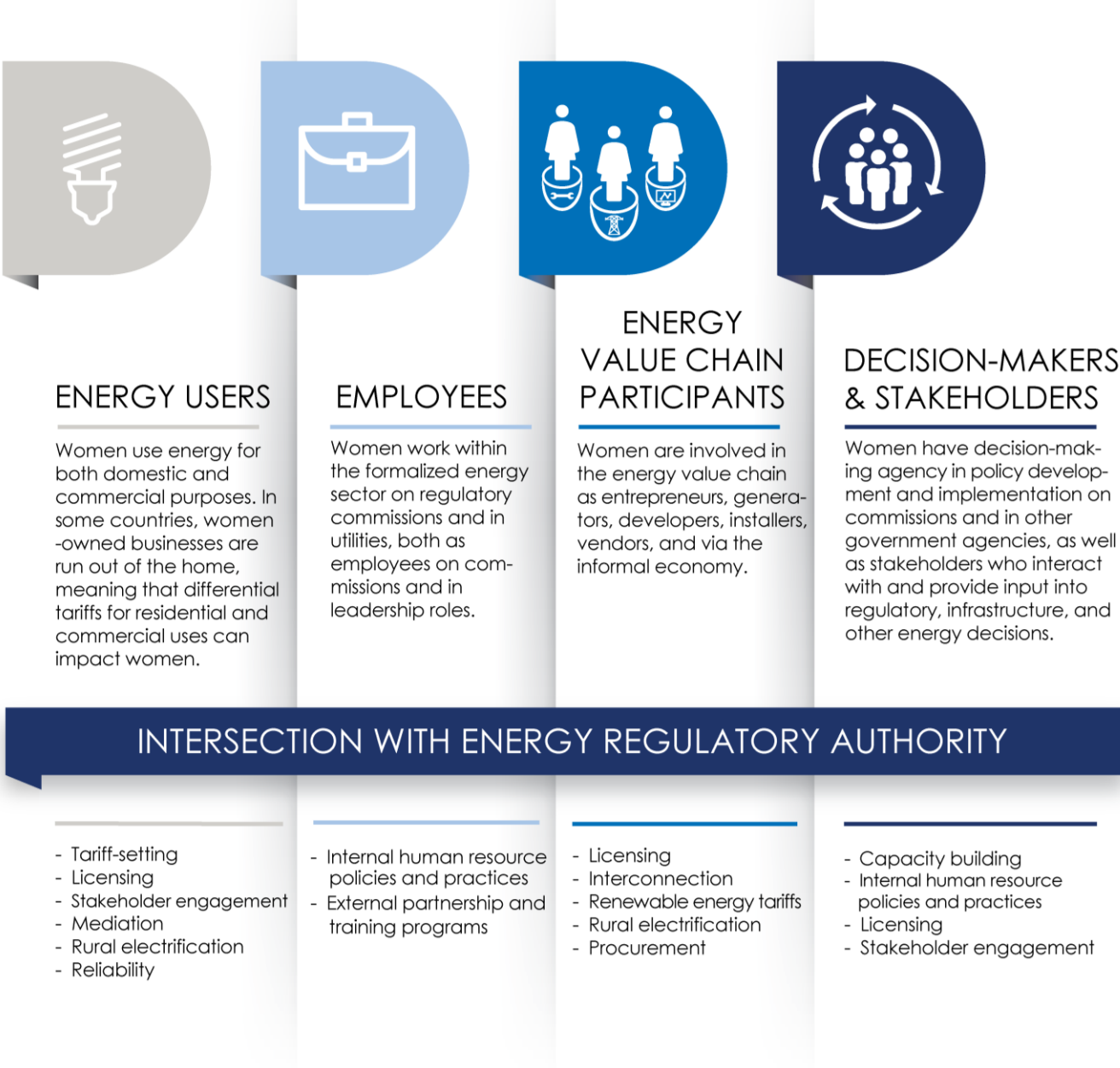
Figure 2: NARUC’s Principles of Effective Regulation



Source: Principles are drawn directly from Key Characteristics of Regulatory Commissions (Archer, 2007).

To better understand how the energy regulator’s role can relate to gender equity, it is important to note the ways in which women interact with the energy sector. While roles will vary depending on societal context, women are engaged within the energy sector in a number of ways. These roles are described in more depth in Figure 3. Current energy regulatory organizations, agencies, and governments may recognize none, some, or all of these roles overtly.

Figure 3 The Roles of Women in the Energy Sector



3.2 LIMITATIONS AND GAPS IN UNDERSTANDING WOMEN'S ROLES IN THE ENERGY SECTOR

It is difficult to quantitatively define how women participate within the energy regulatory sector internationally. This is due in large part to a lack of gender-disaggregated employment data in many countries, and a gender-blind approach by most governments, agencies, and organizations to understanding the impacts of policies, regulation, and energy supply on women. Limitations to fully understanding the roles women have within the energy sector include:

A lack of gender-disaggregated employment data. Gender-disaggregated employment data is not typically tracked by utilities, developers, or energy regulators. This lack of data puts limitations on intervention techniques such as improving gender diversity among employees or measuring productivity and women's impact as employees within the sector. Gender-disaggregated data is needed to understand the barriers that are hindering participation in the energy sector workforce (Cecelski & Dutta, 2011) (Habtezion, 2012).

Current economic contribution of women in the energy sector is unaccounted for at the national level. There is also a lack of information about women's participation in the energy sector more broadly. For instance, research indicates that "Women—both as consumers and suppliers—remain invisible in the energy sector. In designing projects to improve energy security, it is crucial to consider realities and differences in needs, constraints, and opportunities between men and women in relation to energy infrastructure and services development" (Mohideen & Tanaka, 2012, p. 1). Similarly, other studies point out that "the energy value chain is largely gender-blind" (Pearl-Martinez, 2014, p. 17) and does not recognize the contributions of women. This lack of data may make invisible women's contributions to energy supply and decision-making. For example, though women largely contribute to the collection of biofuels, this economic contribution has largely not been evaluated at national levels (Morris, 2015). Low-income women are more likely to participate in the informal economic sectors, which are not generally covered in national energy policies (Habtezion, 2012, p. 3).

Energy regulators can take steps to both support equity in women's representation within their organizational structures and integrate gender into policy and stakeholder processes in the energy field. Each of the following chapters in this guide identifies key barriers and strategies for energy regulators related to gender equity in employment, energy regulatory policies, and large energy infrastructure projects.

3.3 PLANNING FOR GENDER EQUITY

Energy regulators can use this guide to understand gender-based barriers and strategies for improving gender equity within their spheres of influence. Since the guide identifies a range of strategies to pursue, energy regulators should create a process for identifying a commission's priorities and creating a plan. Commissions can do this by establishing executive commitment, creating opportunities to engage more diverse stakeholder groups internally and externally, identifying key barriers and strategies, and implementing those strategies and monitoring results. An example of a typical planning process is outlined in Figure 4. Key areas include:

- **Executive Commitment:** Energy regulatory commissioners can begin by identifying reaching gender equality as a priority for their commission. They should appoint a working group, which can include internal and external representatives, to investigate gender barriers unique to their country’s context and to identify strategies best suited to improve gender equity.
- **Working Group:** The designated working group should gather and review employment and consumer data, in particular gender-disaggregated data, and consult with diverse stakeholders in-country to understand the most pressing challenges and best opportunities for the regulatory authority to take action. The working group should document these findings and report back to the commissioners.
- **Implementation Opportunities and Authority:** The commissioners should review the findings and determine next actions to prioritize that fall within their authority. Implementation can take place by incorporating strategies into an ongoing planning process for identifying priorities, plans, and timelines for implementation.
- **Monitoring and Evaluation:** In all cases, progress toward implementation and outcomes should be monitored and evaluated to determine impact and to adjust as needed where challenges are encountered.

Figure 4: Planning Process Steps for Gender Equity



Source: Planning process adapted from the *Virtuous Cycle: A Framework for Strategic Energy Management* (Environmental Defense Fund Climate Corps, 2012).

Box 1: Further Reading Strategic Planning

Additional resources for strategic planning include Energy Sector Management Assistance Program’s (ESMAP) *Integrating Gender Considerations into Energy Operations*, and ENERGIA’s *Mainstreaming Gender in Energy Projects: A Practical Handbook*. Full references to these documents are available in Section 8.2.

SECTION 4 EMPLOYMENT

Employing qualified women within energy regulatory commissions, particularly in leadership and technical roles, is an important pathway toward gender equity.¹ This supports equity in three ways: (1) progressing toward equal representation and opportunity in a historically male-dominated field, (2) providing women with decision-making agency on energy, and (3) broadening gender perspectives throughout the energy supply chain. In addition to equity, research studies have cited improvements in metrics such as productivity and quality of work with higher percentages of women in the workplace (Moodley et al., 2016) (Noland et al., 2016).

KEY ISSUES

When considering employment to promote gender equity within energy regulation, regulators should review the following concepts:

- Regulators can use employee benefits and retention incentives to support and recruit women in the energy regulatory field, which has historically been structured to support men.
- Educational and training opportunities can help women advance into more technical and influential positions within the energy regulatory field.
- Rigorous gender awareness training for men and women can promote a safe workplace and gender equality.

4.1 CHALLENGES

Women serve on energy regulatory commissions and in the energy sector more broadly as employees in different staff- and management-level roles. Increasing the number of qualified women in an organization's leadership has been linked to better performance for organizations in global studies (Noland et al., 2016). Previous research has also demonstrated that women can bring openness to new perspectives in their work, may be more likely to be collaborative and inclusive, and can demonstrate strength in fairness and ethics (Moodley et al., 2016). Where data is available, however, it shows that the energy sector is largely dominated by men. Employment estimates for women in the oil and gas industry are 27 percent in Canada and 20 percent in the United States, whereas women's employment in the renewable energy industry is around 33 percent (Pearl-Martinez, 2014, p. 40). The distribution of women across roles varies within the energy sector. Ernst & Young's 2016 study of the world's 200 largest utilities found that there were only 25 women at the board level, and employment rates vary among different levels of seniority and occupation within the energy field (Ernst & Young, 2016). In Latin America, a survey by Castelo (2013, p. 7), found that of 13 respondents, only 6 national

¹ Within gender diversity, regulatory commissions can also strive to achieve intersectional equity by employing women (and men) of different income, racial, and ethnic groups to ensure strong representation across social groups in its employees.

energy ministries had a gender policy within the organization, and only 3 of the respondents reported having “gender-trained staff” (Rojas & Siles, 2015).

Within the energy regulatory field, experts point to a variety of barriers that pertain to employment and the advancement of women. These barriers can best be understood as cultural and institutional obstacles that can preclude women from participating in the workforce. The following barriers have been identified in a variety of country and local contexts, and may not apply to all energy regulatory agencies.

4.1.1 CULTURAL AND SOCIAL BARRIERS

Cultural and Social Norms. Norms are defined as widespread ideals about how people should behave within different situations. Social norms pertain to a society whereas cultural norms pertain to different groups within a society. Norms may take into consideration a variety of factors to define behavior—such as people’s class, gender, sex, and geography. This guide focuses on norms as they relate to women. Cultural and social norms influence the ways women participate within the labor market and domestically. In many cases, these norms have relegated women to traditional² positions within formal and informal economic sectors (Mohideen & Tanaka, 2012) (Morris, 2015) (Pearl-Martinez, 2014). These cultural expectations can influence the roles that women can ultimately take on within the energy regulatory sector, especially if a position is not responsive to cultural expectations in and outside of the workplace. For example, in Latin American countries, women traditionally perform roles related to agricultural production and trading, food preparation, child-rearing, providing traditional medicinal care, and other domestic duties (Castelo, 2013). Additionally, women in urban areas who participate in the job market are often still responsible for domestic duties, contributing to time poverty³ (Castelo, 2013). Gender roles and norms can influence preferences for energy vocation and success due to assets, credit, education, and networking opportunities (ECOWAS, 2016).

Women’s preferences for labor mirror the dominant view of what is appropriate for women. For STEM-focused⁴ career pathways that are concentrated heavily within the energy sector in the United States, “about 50 percent of women are interested in careers in the STEM areas, but within the first 10 years, half of those women are leaving jobs or further training in those areas” (Pearl-Martinez, 2014, p. 43). This attrition is not simply “male-directed,” but also connected to women feeling a cultural mismatch and not seeing, “their identity as fitting into those fields” (Pearl-Martinez 2014, p. 43).

Discrimination. Outside of cultural norms, gender-based discriminatory practices persist in both developed and emerging economies. Discrimination precludes women from opportunities for education, skill-building, work experience, job placement, and advancement. Discrimination can also relegate women to specific types of roles by deeming that they are better suited toward certain types of tasks over others. Negative stereotypes that depict women as poor in assets and education are major barriers to women participating in the energy sector both as employees and business owners (Morris, 2015). In Pakistan, for example, plant operations and maintenance is considered a “male-exclusive domain,” while women are often within administration or finance

² Traditional roles in this guide refer to historical culturally dominant ideals around the duties and responsibilities of women within society or social context. These roles are highly dependent on the cultural context, but often include expectations around domestic duties such as cooking, homemaking, and child-rearing.

³ Time poverty refers to a lack of time facing an individual and constraining their choices and activities.

⁴ STEM stands for science, technology, engineering, and mathematics and is a common acronym for these educational fields and employment.

roles (Pearl-Martinez, 2014, p. 49). Despite women making up 40 percent of the STEM workforce in China, labor law precludes women from jobs in mining, tunnel engineering, and naval engineering (Pearl-Martinez, 2014, p. 41). Additionally, even where gender discrimination is not overt, experts have noted that often women are found within administrative or finance roles within the energy regulatory field, and not within the more technical roles (Advisory Committee, 2017).

Lack of Education and Training Opportunities. Education and training opportunities for women are disparate across the globe due to discrimination and limited access to resources. This can include access to fundamental education and vocational training, as well as life skills training aimed at professional advancement, such as negotiation and leadership. Unequal access and lack of participation can restrict women's career pursuits and advancement opportunities. In the energy sector, gender inequality in STEM fields and secondary and higher education contribute to a lack of women within the labor force (Mohideen & Tanaka, 2012, p. 3) (Morris, 2015). Concurrently, energy access in the home can also limit women's participation in higher learning opportunities. Where women are tasked with the collection of biofuels or other domestic tasks, electrification can provide necessary time savings to allow women to pursue education (Köhlin et al., 2011).

4.1.2 INSTITUTIONAL BARRIERS

Lack of Gender-Responsive Policies and Benefits. Experts also cite hesitation to include women within the energy workforce as a barrier due to concerns over sexual harassment and gender sensitivity within the workforce (Cecelski & Dutta, 2011). One expert described the hesitation to hire women as engineers within their commission due to the nature of the work, since overnight stays away from home are a requirement of the position and not acceptable for women. Other structural deficiencies that can impact women's job opportunities could include access to safe transportation for commuting, especially in areas that have high rates of gender violence (Advisory Committee, 2017). These examples illustrate how regulatory commissions may not have policies in place that make the workplace accessible and inclusive to women employees.

Lack of Antidiscrimination Protections. Protections refer to the presence of a formal legal or policy framework designed to reduce inequality and discriminatory practices. The lack of workplace protections for women is a major challenge for female employees in the energy sector (Morris, 2015). This can directly impact the hiring practices of energy organizations. Women often have unequal legal status outside of the business sector, and laws "concerning marriage, family relations, and inheritance may have a determining influence on women's ability to participate in the private sector" (Simavi, Manuel, & Blackden, 2010). A lack of protections for women may make it more difficult to ensure that an organization is adhering to socially just hiring practices and providing women with equal opportunities for advancement. Even where national protections may exist, they may not be enforced. For example, a recent study in China pointed to overt discrimination within civil society job postings, with 13 percent expressing a preference for men in 2017. Where job advertisements mentioned women, the study found that they were often sexualized, had to meet aesthetic requirements, or disclose marital status (Human Rights Watch, 2018).

4.1.3 SUMMARY OF CHALLENGES

Research findings show that there are internal and external barriers that energy regulatory commissions may encounter when trying to attract and retain women in their workforce. These barriers are dependent on societal and organizational culture, protections in place for women, and opportunities available to women.

4.2 STRATEGIES

Energy regulatory commissions can employ a variety of strategies to overcome barriers and support gender equity within the energy regulatory field. This section outlines strategies for national governments, energy regulatory commissions, other energy organizations, and individuals to help support equity within the field. They include gender policy and awareness training and resources, hiring quotas, training and education opportunities for women, and gender-sensitive benefits. Throughout this section, examples from practitioners in the field who have integrated these strategies into their organizations are highlighted.

Box 2: What Can an Energy Regulator Do?

Levers for Gender Equity in Employment

Energy regulators have a variety of levers and tools available to them to help promote a gender-equitable workforce in the energy sector. These include:

- Using human resource policies and practices to promote safe, equitable workplaces and gender-balanced workforces;
- Building partnerships and human capital pipelines from technical schools and universities;
- Conducting marketing and targeted outreach to reach new employees; and
- Implementing procurement policies to ensure that women-owned businesses can participate in the energy value chain.

This guide focuses primarily on human resource policies and practices.

4.2.1 STRATEGIES FOR EMPLOYEE RECRUITMENT, RETENTION, AND ADVANCEMENT

Workplace Protections. To support gender equity, governments and organizations can create policies focused on providing workplace protections for women. Such gender-sensitive policies include sexual harassment and antidiscrimination policies (ECOWAS, 2016), as well as ensuring that there is no penalty for reporting biases (Ernst & Young, 2016). These policies need to be backed by training and systems to ensure reported harassment or discrimination is thoroughly investigated and addressed and that employees who report violations can do so safely and without negative consequences.

Box 3: Reykjavik Energy and Employment

Reykjavik Energy (OR) is a public multi-utility company that provides electricity and water to about 70 percent of the population of Iceland (Reykjavik Energy [OR], 2018). The 2008 Iceland financial crisis forced OR to downsize to two thirds of their previous workforce, and consequently, figure out how to restructure the company moving forward. This restructuring instigated a full reorganization of the company. During this process, OR recognized that they had a large gap in women's and men's employee pay rates—with wages around 7 percent higher for men—but had no up-to-date studies or concrete data to inform improving gender equity within the utility (Bjarnason, 2016). The utility began proactively

working to eliminate the gender pay gap and work toward a gender balance in management within their company. As a result, the utility partnered with Pay Analytics to develop a model showing the immediate effects of every pay decision in real time, on the gender wage gap. Using this model, the company's wage gap has dropped from 8.4 percent in 2008 to 0.3 percent by December of 2017.

To improve the balance of women in management, OR realized that solely recruiting women into STEM jobs is not sufficient. Citing research which demonstrated that the retention rate for women in STEM fields is half the rate of men over 10 years due to company culture, OR determined the organizational culture should be adjusted to improve retention rates and keep women in the workforce, instead of focusing solely on recruitment. To understand the current barriers and potential areas of change, the utility hired a gender specialist to study the organizational culture of OR and make recommendations. The report from this analysis showed several recommendations to increase retention rates (Bjarnason, 2017):

- Mandating gender equality courses for all employees;
- Training mentors on the utility's new gender-equality approach for all new employees;
- Creating gender equality committees in all subsidiaries of the company;
- Revising working hours to support a work-family life balance;
- Developing an action plan specific to each unit or department; and
- Creating a gender-focused recruitment process.

OR has been working to incorporate these recommendations into their company and has seen many fast-paced changes. Based on their annual job satisfaction survey, they have found less risk for sexual harassment and reached their target of women comprising 50 percent of company management. As of 2017, OR had a higher job satisfaction rate than the market benchmark and has received many awards including the "Government's Equal Opportunities Award." They have also noticed higher quality job applications from both men and women (Bjarnason, 2017).

Enhanced Benefits. As described above, there are different social and cultural expectations for women and men in and outside of the workplace. This can include expectations around caring for children and elderly parents, and other domestic tasks. Women may self-select for positions that have flexibility or benefits that help support their family needs and obligations outside of the workplace. Experts point to a variety of benefit types for both women and men that can help women stay within the workforce, including paid family leave, stipends for childcare, flexible work hours, telecommuting options, and transportation benefits (Advisory Committee, 2017) (Onley, 2016). Providing these benefits is a way to build equity between genders, and attract and retain talented employees. An example of gender-sensitive types of benefits can be found in Nepal, where the Rural Development Project provides women with childcare stipends to help mothers stay in the workforce (Cecelski & Dutta, 2011). Experts interviewed also point to the added need for flexibility in hours to meet family obligations—which can benefit both men and women. One regulator specifically noted that flexible time is important to help people meet their family's needs, but also it is important to make sure that people do not feel vulnerable within their positions for trying to meet those needs (Advisory Committee, 2017).

Regulators interviewed for this guide also noted that there are additional safety concerns for women that should be considered—not only in the workplace, but in their commutes as well. In places where women may face gender-related violence on public transportation, this may be an area of concern for organizations to make sure

their employees can get to and from work safely and travel for the position as needed or required (Advisory Committee, 2017).

Box 4: USAID’s “Engendering Utilities” Program and Human Resources Framework

Background

In 2015 USAID launched Engendering Utilities in order to better understand how to increase the role of women in the power sector and increase gender equity within participating electric utilities. It includes gathering data and conducting baseline research, designing and implementing custom gender equity interventions for each utility partner, developing the Best Practices Framework for Increasing Women's Participation in the Power Sector through HR Interventions (Framework), and rolling out an executive leadership course on gender equity for utility Human Resource (HR) and operations professionals (Cain, Novak, & Owen, 2016) (Hart, 2018).

Interventions

In the first phase of the study, USAID collected data from 14 utilities globally to understand the current state of women’s representation within the organizations and the distribution of their employment responsibilities across departments. The findings of the study showed wide variations and inequalities in employment practices throughout all of the organizations (USAID, n.d.). Of the 14 utilities, 7 joined the next phase of Engendering Utilities and made an executive level commitment. USAID worked with the partner utilities to design customized interventions to address gender gaps in their corporate structures based on the initial baseline research (Cain, et al. 2016).

Following the implementation of the first round of customized interventions, USAID partnered with the Georgetown University McDonough School of Business to develop and deliver a “Gender Equity Executive Leadership Certificate Program” for employees from the participating utilities (USAID, n.d.). Program curriculum is focused on gender equitable human resource interventions throughout the phases of the employee lifecycle – recruitment to separation – and includes modules on topics such as conducting salary analyses for positions held by both men and women, conducting employee satisfaction surveys using sex-disaggregated data and analysis to determine if there are gendered differences of the employment experience, and using change management and communications to make a strong case to executive leadership that gender equity interventions should be adopted by the utility (Cain et al., 2016) (Hart, 2018).

Participants in the course worked directly with an HR expert coach to develop and implement targeted capstone projects that outlined an action plan to address key gender gaps impacting their utility using knowledge and skills developed in the Executive Leadership Course. The interventions targeted a range of topics in the HR employee lifecycle including professional development, mentoring and leadership, and recruitment and outreach. While the Executive Leadership course participants are currently developing their capstone projects which will outline the next phase of their recommended gender equity interventions, notable interventions that the utility partners have already been implemented. These include collecting sex-disaggregated data, creating mentoring programs targeted at increasing career growth opportunities for women, implementing behavior based interviewing techniques to reduce unintended

gender bias in hiring practices, working with local schools to increase interest in the energy sector among girls, and instituting “Take Your Daughter to Work Days” (Cain et al., 2016).



Girls attend EKEDP's first ever Bring Your Daughter to Work Day, supported by USAID's Engendering Utilities Program. Source: (EKEDP, 2016)

Notable results of the Engendering Utilities program thus far include:

- An increase in women's participation in training and internship programs. In the case of Nigeria's distribution company, the program saw a 557-percent increase in women's participation in training over the course of one year;
- An increase in women's access to leadership and technical training across the 7 participating utilities;
- An increase in the number of female interns across the companies that offer internships; and
- Collection of basic sex-disaggregated HR data by all of the participating utilities.

To collate resources into a user-friendly tool for utilities, USAID created the Framework which outlines evidence-based best practices for increasing gender equity at each stage of an employee's HR lifecycle. The framework has seven sections based on the employee's HR lifecycle (Hart, 2018):

1. Recruitment
2. Human resource compliance and reporting
3. Payroll and administration
4. Professional development
5. Financial benefits
6. Risk management
7. Separation and retirement

Each section provides best practices, examples, challenges, and available resources and tools for utilities to help advance gender equity within their workforce. Selected best practices drawn from this framework include:

- Conducting outreach to educational institutions that leads to long term attraction of both female and male candidates;
- Creating family leave policies;

- Collecting sex-disaggregated data at the company level to regularly monitor progress for gender equity;
- Reducing unintended bias in recruitment and hiring;
- Establishing a corporate-level commitment to gender equity; and
- Creating mentoring programs for women.

To learn more, regulators can access the framework at: <https://www.usaid.gov/energy/engendering-utilities>.

Continuing Education and Training. Within social and cultural contexts, women may have disparate access to education, training, or experiential opportunities than men. If hired into a field historically dominated by men, women may be less well positioned to compete. To support equitable outcomes, energy regulatory agencies can make sure that trainings, skills-building, and ongoing educational opportunities are available to women. For example, Montevideo, Uruguay, provides differentiated training for city councilwomen on political participation, due to the historical inequity of women’s participation in Montevideo’s public sector (Rojas & Siles, 2015, p. 42).

Box 5: Snapshot: Gender Sensitivity Trainings in Nicaragua

In 2009, the Ministry of Energy and Mines (MEM) and the National Electric Transmission Company (ENATREL) started the National Electrification Project of Nicaragua. The project aimed to electrify rural homes “in an operational and economically sustainable manner, as well as satisfying the energy needs of women living in these communities” (Rojas & Siles, 2015). Through this program, women in communities where ENATREL worked were provided with opportunities to participate in workforce development and leadership trainings. Similarly, the utility instituted gender sensitivity trainings and awareness initiatives within its employee training program.

Key results from this initiative include:

- “Training women to work in power lines [sic] installation, activity previously performed by men;
- Role change as a consequence of gender sensitizing processes;
- Action implementation [sic] of gender municipal policies in municipalities;
- Greater participation of women in community associations such as family, community, and life cabinets where they assume roles as leaders; and
- Women are more willing to acquire more knowledge and participate in more training to improve their abilities and skills to become leaders” (Rojas & Siles, 2015, p. 118).
- “ENATREL staff voluntarily report the gender inequities that they encounter in their daily work in the field, and they can translate this awareness into a new way of conducting their professional and family activities” (Empresa Nacional de Transmisión Eléctrica et al., p. 14).

Gender Awareness Training and Resources. Building awareness within regulatory commissions of existing inequalities and working to break down negative stereotypes and biases are important processes to advancing gender equity. Gender awareness and sensitivity trainings are a common way for organizations to begin addressing challenges in organizational behavior and culture (Cecelski & Dutta, 2011). These trainings are meant

to build awareness of gender inequalities and tie them specifically to the daily work and culture of the workplace. Gender sensitivity training and awareness should include women as well, as employees of all gender identities can carry biases. It is also relatively uncommon for women in the energy sector to discuss women's needs unless they have received training on gender issues (Castelo, 2013). Additionally, regulatory commissions can develop public service announcements about gender and energy (ECOWAS, 2016), and internal communications campaigns aimed at supporting women in the workplace (Advisory Committee, 2017). Ideally trainings and communications efforts will be structured and reinforced as part of a larger web of organizational strategies, rather than be completed in isolation.

Box 6: Snapshot: Uzbekistan Gender Sensitivity Management

In 2010, the Asian Development Bank profiled the Uzbekistan Talimarjan Power Project, which took steps to institutionalize gender sensitivity in management and the workplace. The project created a Gender Action Plan (GAP) and worked to train power plant staff in areas such as hiring practices, data collection, and working conditions, with a focus on women specifically. Additionally, the project aimed to create community programs to support women and their families within the community with health programs, scholarships, and vocational training. This project utilized interventions to build gender sensitivity internally, but also worked to recognize the opportunities to provide gender-specific outputs for women in impacted communities (Mohideen & Tanaka, 2012).

Track Gender-Disaggregated Employment Data. Regulatory commissions can take steps to track the roles women currently play within their labor force on an annual basis. This will help improve the understanding of roles women currently hold within the organization and track the advancement of women. The use of this data could also help triangulate areas of the workforce that require targeted recruitment or additional support for women to advance to positions of leadership.

Recruitment Targets and Pipeline Programs. Quota policies for recruitment and advancement allow regulatory agencies to set a goal for representation within corporate boards or elected positions. In hiring practices, quotas can be used to increase the number of women in the workforce by demonstrating a commitment to hiring women and potentially expanding the pool of applicants to include more women. Quotas can be especially effective where strong gender biases exist, to “increase women’s employment and participation in decision-making activities” (Hughes et al., 2013, p. 19). They can be set either by organizations, or by a governmental entity. For example, Rwanda’s Legislature requires that 30 percent of parliamentary positions be filled by women (Warner, 2016). Organizations and governments can consider a variety of types of quotas, but can also support the targeted hiring of women into roles where they are underrepresented and consider quotas for women’s representation in senior roles and management institutions (Ernst & Young, 2016) (Köhlin et al., 2011). Organizations interested in setting hiring targets should ensure they follow national laws and regulations and pursue any policies with careful design and consideration.

Of note, quotas can be a controversial tool and may lead to a perception that people hired by quotes are not qualified for their positions. A softer form of affirmative action, known in the United States as the Rooney Rule involves ensuring that every candidate pool for a position has a qualified candidate from an underrepresented group (DuBois & Whitmore Schanzenbach, 2017). This approach helps counter implicit biases that may keep women and other underrepresented groups from being interviewed for positions. Regulatory commissions can

also connect with colleges and universities with training programs that align with the field and proactively recruit candidates to build a diverse pool of applicants.

In lieu of, or in addition to instituting a quota, talent pipeline programs can also be a way to attract and recruit women into regulatory commissions. Offering internships for local university students or partnering with organizations focused on vocational training for women can help regulatory commissions and energy sector actors increase women's employment in the field. For example, USAID and NARUC offer a "Women in Energy Regulation" internship program that has placed women college graduates in internships within regulatory commissions in Kenya and Tanzania. More information about this program can be found at: <https://www.naruc.org/international/where-we-work/global-initiatives/gender/>

4.3 CASE STUDY: COSTA RICA

OVERVIEW

This case study explores how Costa Rica's Public Services Regulatory Authority (ARESEP), the Ministry of Energy and Environment (MINAE), and the publicly owned utility, the Costa Rican Institute of Electricity (ICE), are encouraging greater participation by women in the country's energy sector. It reviews the country's national policies on gender and how they are being aligned with organizational-level policies, as well as practices being employed to build gender equality via organizational hiring. Workplace policies such as antiharassment policies, gender-sensitive benefits, and supply chain policies to build equity for women are also in use in some or all of the organizations reviewed. Like many countries, Costa Rica still struggles with a culture of machismo,⁵ prejudice, and stereotypes that can inhibit gender equality in the energy sector. Stakeholders consulted suggested several pathways forward to help shift away from these cultural norms.

4.3.1 CONTEXT OVERVIEW

Costa Rica is one of the most urbanized and electrified countries in Latin America. Despite some of the advancements that have been made in the energy sector, the country is still struggling to achieve balanced labor participation between men and women. In 2016, the World Economic Forum reported that 8 percent of the female workers were unemployed in Costa Rica, compared to only 5 percent of male workers (World Economic Forum, 2016). A greater percentage of women workers also engaged in part-time employment compared to men. In the private sector, the World Economic Forum reported that almost 44 percent of businesses have at least one woman involved in ownership, but only 15 percent of top management positions are held by women. Related to education, 31 percent of all postsecondary students graduated in the STEM field and only 23 percent of those were women (World Economic Forum, 2016).

To counteract these trends, the Government of Costa Rica has taken steps over the past two decades to improve gender equity in the workplace. Costa Rica has established many national policies and plans that incorporate gender equality in its development and employment goals (see Table 3). These include prioritizing

⁵ "Machismo" refers to an exaggerated sense of masculine pride and a culture of male dominance and entitlement.

gender equality when crafting national policies, collecting gender-disaggregated data from different sectors, establishing quotas to ensure that women are represented in the legislature, and strengthening workplace protections for women.

Table 3: Summary of Policies, Laws, and Initiatives for Gender Equity and Employment

Policy/Law/Initiative	Goal
National Policy on Gender Equality and Equity 2007–2017/ National Institute of Women (INAMU) ⁶	“The institution-building in Costa Rica’s equality plan is aimed at strengthening the political, technical, and financial competences of . . . INAMU, at both the central and local levels . . . along with the enactment of appropriate legislation, ongoing training, and adequate budget allocation” (Bárcena & Prado, 2017, p. 27).
National Development Plan 2015–2018, Ministry of National Planning and Economic Policy	“Improve the economy and the quality of employment generation, combat poverty and reduce inequality, and have a transparent and efficient government” (Bárcena & Prado, 2017, p. 45). “Gender issues are present across all 16 sectoral objectives, and the human development and social inclusion sector sets out a program for the implementation of the National Policy on Gender Equality and Equity and the National Plan to End Violence” (Bárcena & Prado, 2017, p. 47).
Law 9325, passed in November 2015 (INAMU, 2016)	“To strengthen and collect gender data on the contribution of unpaid domestic work, largely done by women. In addition, five public-private partnerships have been established to promote gender equality at the workplace and to strengthen women’s entrepreneurship and training” (UN Women, 2016).
Labor Procedure Reform (July 2017)	Substantially amends the country’s labor and employment laws. Notable reforms include the following: prohibiting discrimination not just based on gender, age, race, or religion, but also on economic conditions or unionization; establishing a fast-track courts process for employees under special protection, which specifically identifies pregnant women and those alleging sexual harassment and denied maternity leave (Trejos, 2016).
National Energy Plan 2015–2030	The National Energy Plan aims to reach the objective of “energy sustainability with low emission levels” and supports the continuation of renewable energy development, energy efficiency, and low-carbon emission transport and outlines seven key strategies to achieve the plan. It considers three factors that compose sustainable development: 1) economic development with competitive costs; 2) social equity; and 3) sustainability in use of natural resources (Ministerio de Ambiente y Energía [MINAE], 2015)

⁶ During the release of this guide, INAMU released the 2018-2030 National Policy for Real Equality between Women and Men.

Policy/Law/Initiative	Goal
National Support Network for the Social and Economic Empowerment of Women (2014)	The purpose of the decree is to articulate the technical, business, and financial instruments that Costa Rica's different institutions provide to enterprises and companies led by women to support their consolidation. It establishes a network to promote interinstitutional coordination, composed of the public institutions or private organizations that develop or may develop actions, programs and projects aimed at improving the economic autonomy of women.
Policy on Gender Equality and Equity (2013)	Program focuses on human rights, gender, intersectionality, multi-culturalism, and sustainable development. Its overall objective is to establish institutional action plans to incorporate the gender lens in the Legislative Assembly, in its administrative functions, and strengthening the gender lens in Congress, (Legislative Assembly of the Republic of Costa Rica, 2013).
National Violence Against Women and Domestic Violence Care and Prevention Policy (2017–2032)	Focuses on prevention of many forms of gender-based violence, including harassment in public areas. The goals of the 15-year plan are to promote a change in the machismo culture, promote non-violent masculinity, promote equality. It also aims to reduce levels of impunity, guarantee greater protection for women, and prevent femicides. Components of the plan will work with children and adolescents to promote cultural change toward equality and non-violence; it also encourages inter-institutional work on these issues.
2009 Electoral Law	Established a 50-percent quota for candidates and delegations in national and sub-national elections. Furthermore, political parties have a legal obligation to reserve a special fund for training women and men in gender equality and human rights issues (International IDEA, 2018).
UN Framework Convention on Climate Change requires development of a Gender Action Plan by November 2019	Six priority areas of this action plan: “Capacity building, knowledge sharing, and communication; gender balance, participation and women’s leadership; coherence; gender-responsive implementation and means of implementation; and monitoring and reporting” (Wahlen, 2017). Action plan also includes gender mainstreaming in the agriculture sector through the development of extension programs for different gender technology approaches and increasing water efficiency technologies for households (Arce et al., 2012).

Costa Rica has made important advances in supporting working mothers via national-level policies as well. The country implemented employer maternity leave policies that have effectively eliminated “maternity costs as a factor driving gender gaps between men and women” (Bárcena & Prado, 2017, p. 32). The policy redistributes the financing of maternity leave by instituting employer contributions to the Costa Rican Social Security Fund. The Government also recently adopted and implemented legislation to improve workforce protections for women to prevent discrimination around motherhood (e.g., separation or penalties due to pregnancy or breastfeeding) and to protect against violence and harassment in the workplace (Bárcena & Prado, 2017, p. 32). In April 2018, the Executive Branch signed a decree requiring all public and private companies that employ over 30 women to provide a lactation room or time and space for breast milk expression and storage (Alvarado, 2018).

4.3.2 THE COSTA RICAN ENERGY SECTOR

Within the energy sector, policies and initiatives to encourage women within the workforce are more nascent. With an abundance of rivers and scarcity of fossil fuel resources, Costa Rica’s energy sector has largely focused on renewable energy development. With advancements in hydropower, solar, geothermal, biomass, and wind energy, the country provided 98 percent of its energy needs from renewables in 2016, and boasts a 99.6-percent electrification rate (The World Factbook, 2018). In 2017, the country operated for 300 days exclusively on renewable energy, with 78 percent of that coming from hydroelectricity, making it the largest producer of clean energy in the Central America and Caribbean region (Pereda, 2018). Within Costa Rica, there are several entities responsible for the operations and regulation of the energy sector. Table 4 outlines key government agencies, the regulatory commission, and the national electricity and telecommunications utility.

Table 4: Role of Authorities

Actor	Role
Ministry of Energy and Environment of Costa Rica (MINAE)	The Energy Division of MINAE acts as the institutional head of the national energy agenda. It is responsible for energy generation of guidelines, compliance with regulations related to the economic activities of the energy sector, and enacting the legal powers granted to the Ministry with the purpose of promoting the evaluation, measurement, and monitoring of activities and projects. MINAE worked to mainstream gender into its National Strategy on Climate Change Action Plan. This was supported by the IUCN Global Gender Office and in collaboration with INAMU. MINAE is also focused on the social equity portion of the National Energy Plan.
National Institute of Women (INAMU)	INAMU reviews environmental and social impact assessments for proposed infrastructure projects and can require changes to projects.
The Public Services Regulatory Authority (Autoridad Reguladora de Servicios Públicos) ARESEP	This is a multisector agency, whose guiding criteria for regulation are economic efficiency and social equity (Reegle, 2015). ARESEP regulates the energy, water, telecommunications, and public transport sectors, and is subject to the Law of Authority on Public Services.
The Costa Rican Institute of Electricity (ICE)	ICE is the service provider for electricity and telecommunications. It is a state-owned utility. It “promotes and strengthens a model based on sustainability, equal access, and national security” (Pereda, 2018). Within the past couple of years, it has become a corporation called ICE Group, which groups other public energy and telecom companies, including the National Company of Power and Illumination. ICE is regulated by ARESEP and subject to the policies promulgated by MINAE (Instituto Costarricense de Electricidad, 2018).
University of Costa Rica (UCR)	UCR is the oldest university in the country and has taken strides toward gender equality and encouraging women to enter the sciences.

4.3.3 GENDER-BASED INTERVENTIONS

The energy ministries, regulatory commission, and national utility within Costa Rica have all taken steps to further create opportunities for women to influence and participate in the energy sector. This includes implementing a variety of interventions focused on hiring and recruitment, and integrating gender into organizational policies.

National Quota and Hiring Policies. The Law of Authority on Public Services (Law 7593) (La Asamblea Legislativa de la República de Costa Rica, 1996) requires that ARESEP’s board of directors meet a minimum threshold of 40 percent for women’s representation (Gutierrez, 2018). The ARESEP gender lead noted that within the organization, there is a balance of representation of men and women in technical roles; though they noted that this is not due to any affirmative hiring policies below the level of the board. According to statistics from ARESEP’s human resources department, of the 220 salaried positions within ARESEP, 109 are held by women and 111 are held by men. Similarly, ICE’s board of directors is currently composed of three men and three women, and this proportion of representation is mandated by the Constitutional Court of Costa Rica. Within the organization more broadly however, ICE demonstrates a distinctly different gender representation. Human resources department data indicates that of the 225 management positions, 61 are held by women while 164 are held by men (Alvarez, D., et al., 2018).



Employee at ARESEP conducting inspection, (ARESEP, 2018).

Aligning National and Organizational Policies. The energy regulator has taken steps to align its strategic policy with national policy. Within the National Energy Plan 2015–2030, social equity was recognized as a key strategy for sustainable electric development in Costa Rica (Ministerio de Ambiente y Energía [MINAE], 2015, p. 14). Aligned with the national plan in its 2017–2022 Strategic Plan, the regulatory commission committed to “deepening its focus on regulation centered on the users that seek equitable access to services and effective social participation.” To fulfill this directive, ARESEP is seeking to address issues of equity both internally to the organization, and externally to the consumer base, as described in the subsequent strategies below. Additionally, the electric utility established an institutional gender equality and equity policy in 2003, committing ICE to “advancing equality and equity of gender as a principle that orients their basic action strategy, organizational culture, and its policies and norms,” (ICE, 2003).

Recruitment Strategies. While neither ARESEP nor the national electricity provider has affirmative action hiring policies for positions below their boards, an expert at ICE noted that the organization has proactively adjusted job descriptions so the language used in job announcements is inclusive of both women

and men candidates. Where job descriptions typically used the male plural for a position, they have adjusted the

language to use both the feminine and male version of the noun.⁷ Through this adjustment, both the utility and the energy regulatory authority aim to decrease the perception that they are interested only in men for their technical positions (Ramirez and Alvarez, 2018).

Workplace Policies. In 2003, due to complaints of sexual harassment among female employees, the electric utility implemented a gender policy aimed at improving equity and equality within the utility. The gender policy notes that ICE “believe[s] that cultural obstacles that women face can only be removed through planned actions, directed and founded on knowledge of the origins of discrimination” (ICE, 2003). In response to this policy, the utility’s Office of Gender has implemented a variety of strategies. These include: (1) convening gender-focused events; (2) providing resources and investigation when violations of the gender policy occur; (3) undertaking surveys across departments at ICE departments regarding the working environment, composition of staff, relationships within teams, etc.; and (4) providing trainings that focus on positive messaging around gender equity and equality. Additionally, the Office of Gender at ICE publicly recognizes departments that promote equity in the following areas: (1) contracting; (2) training in prevention of gender discrimination; and (3) training for women and men on gender equity and equality.

Providing Enhanced Benefits. The utility and the energy regulatory commission have both implemented workplace policies and benefits that provide more flexibility for women. Specifically, both organizations have expanded minimum standards of maternity protection, provide different types of paid leave to attend to family responsibilities, provide onsite childcare facilities, and increased paternity leave and breastfeeding leave within the organizations (Inter-American Commission of Women & Organization of American States, 2011). ICE and ARESEP have instituted flexible schedules for employees and offer workshops on the advantages of shared responsibility for children and other domestic responsibilities.

Certifying the Value Chain. Since 2016, INAMU and the UN Development Programme in Costa Rica have managed the “Gender Equality Seal” program. The program provides recognition for organizations that are committed to gender equality. Forty-five organizations, primarily from the private sector, participated in this program in 2016 (Brennan, 2017). The program represents a group of organizations that commit to promotion of gender equality and economic empowerment of women; its objective is to promote entry of women into the labor market and improve the quality of their employment (INAMU, 2016). The organizations that signed a



Employees of ARESEP on the National Day of Equity, (ARESEP, 2018).

⁷An example of this is adjusting an advertisement for “ingenieros” (engineers) to “ingenieros/as” to include both the male and feminine nouns.

letter of intent in 2016 participated in an awareness-raising program called “Equality of Gender in Employment”; in this first phase, the organizations received training and tools to undertake a diagnosis of gender gaps and to develop actions plans within their organizations. Via the program, the Compañía Nacional de Fuerza y Luz (CNFL), a power utility within ICE, was recognized through the “Gender Equality Seal” along with two other public entities that work in the energy sector were also recognized: Refinadora Costarricense de Petróleo (RECOPE), the state petroleum refining entity, and the public university, UCR. Additionally, the utility has taken steps to promote women’s participation in energy infrastructure, through the hiring of women construction workers to build the Reventazón Hydropower facility. In 2013, 89 female construction workers were hired despite resistance from the general contractor. The experience was considered a success as it demonstrated the capacity of females in nontraditional occupational roles and could open opportunities for women to participate in other nontraditional jobs (Álvarez, 2016).

Talent Pipeline Programs. To “promote the recruitment of young people aged 18–35, women, people with disabilities, and other marginalized groups,” INAMU launched two pilot programs (UN Women, 2016). In 2018, INAMU launched a program called “A Costa Rica without Equality Gaps for Women 2018–2030” (INAMU, 2018). The program aims to reduce and eliminate discrimination and inequality between women and men; this goal is supported by the Costa Rican Government and establishes a strategic plan for equality, inclusion, and human rights. UCR also hosts a “Women in Energy” mentorship program. This program offers women from public schools the opportunity to meet with scientists and technical professionals, lectures, and visits to the engineering laboratories to learn more about areas of technical study (Lemos, 2018). The “Women in Energy” program is viewed as particularly important as it provides role models and mentors for young females to meet women who are working in the energy field; mentorship and celebrating female success is viewed as an important method to increase females studying in the STEM fields (Lemos, 2018).

4.3.4 CHALLENGES

According to a McKinsey Global Institute report, three elements are needed to achieve full gender parity: 1) gender equality in work; 2) gender equality in society; and 3) a shift in attitudes (Woetzel, J., et al. 2015). Thus, removing structural barriers to gender equity and promoting women’s participation in the decisions that affect their lives are important strategies for achieving equity and sustainable development. Despite multiple initiatives on the national level and within institutions in Costa Rica, cultural and social norms present persistent barriers to organizational and cultural change in the energy sector.

Cultural and Social Norms. Despite numerous national policies and plans, social attitudes and gender norms were noted as persistent barriers to achieving equal representation of women within the workforce. Specifically, representatives from ARESEP, ICE, and UCR noted that machismo, prejudice, and stereotypes are often present in the recruitment and hiring process. For example, one expert shared that hiring managers often do not believe women have the appropriate skills/capacity for certain positions. One of the most consistent barriers noted among stakeholders is negative social attitudes toward women in technical roles and decision-making roles within institutions. Stakeholders noted that changing these fundamental social norms regarding gender roles will take time. They also shared that laws and decrees are more effective than institutional policies, as laws and decrees must be implemented whereas policies can often be interpreted as aspirational (Ramirez and Alvarez, 2018).

Additionally, generational norms were highlighted as a barrier to getting more women involved in the workforce. Staff working on gender mainstreaming noted key senior decision-makers on boards of directors or in other

management positions often hold antiquated concepts about gender roles, limiting female participation at higher levels (Gutierrez, 2018) (Ramirez and Alvarez, 2018).

Organizational Change and Executive Commitment. Since Costa Rica is in the early stages of advancing gender equity and equality within institutions, stakeholders at ARESEP and ICE acknowledged that implementing organizational policies and initiatives aimed at gender equity have been met with some resistance, likely associated with socio-cultural conceptions of gender roles. Stakeholders noted that while it is important for the success of the initiative to gain buy-in and support from key decision-makers, and boards of directors—this type of support is hard to gain and leads to mixed messages for organizational behavior. Additionally, stakeholders shared that organizations aiming to replicate these strategies will need to dedicate time to internal communication, awareness building, and empowering champions for gender equity within the organization (Gutierrez, 2018) (Ramirez and Alvarez, 2018).

4.3.5 KEY TAKEAWAYS

While multiple initiatives are underway within the energy sector in Costa Rica, many of these interventions are in their infancy. Despite this, energy regulators can learn from the steps that have been taken, both in terms of recruitment and workplace policy interventions, but also ways to promote women within the energy value chain.

Similar to Costa Rica, many countries have set national policies and goals related to the employment and participation of women in the labor force. These types of policies can help drive regulatory commissions and private/public sector entities to implement internal and external organizational policies to support these goals. Overall internally, Costa Rica's energy sector entities are in earlier stages of building awareness of gender inequities in the energy labor force and find ways to address this, both through organizational policies and supporting women in other



ARESEP employee inspecting gas tanks (ARESEP, 2018).

parts of the value chain. Stakeholders interviewed suggested several steps for future improvement, including:

- Develop key messages to higher-ups; for example: increased gender parity improves productivity, effectiveness, and the image of the organization;
- Deconstruct stereotypes and myths around the technical fields and who can do what;
- Provide opportunities to students from young ages to learn about different technical careers;
- Testimonials from female professionals are essential to demonstrate the barriers they overcame, as well as management of family life, work-life balance, etc.;
- Student workshops with males and females to explain what careers are available in technical fields;
- More frequent forums on the advantages of parity, likely convened by INAMU; and
- Activities to build awareness and motivate females in these careers is very important because there is a barrier in knowledge of careers in the energy sector for women (Lemos, 2018).

As a key next step, Costa Rica’s energy regulator has started to look at its influence externally on outcomes for all populations or users. To do this, ARESEP is studying gender-differentiated impacts in consumer studies. The authority plans to begin incorporating this information to create mechanisms to better serve their consumers (Gutierrez, 2018). As part of this work, ARESEP has held focus groups to understand its market segments (Gutierrez, 2018). In 2017, ARESEP conducted an assessment with women’s groups to understand more about the energy needs of women and how changes in tariffs impacts their economic situation. To increase accessibility and response to the surveys, the type of language used in the assessments was tailored for each target group so the surveys could be easily understood by each target group. ARESEP has also conducted studies on poverty, recognizing that single female-headed households are disproportionately impacted by changes in tariff structures relative to other households. The goal of these studies is to develop tariff subsidies for minorities, especially single women heads of household (Gutierrez, 2018).⁸

Carrying out consumer studies is also part of ARESEP’s Intersectoral Plan for Vulnerable Groups. ARESEP has already implemented energy tariffs, specifically targeted at supporting vulnerable groups, under the Intersectoral Plan, with the Joint Social Welfare Institute (IMAS) and MINAE, along with the electricity distributors. This plan came about from the National Development Plan 2015–2018 to contribute to the country’s goals of poverty reduction (MINAE & IMAS, n.d., p. 3). The Intersectoral Plan specifically identifies female-headed households with children and unemployed female households as the primary beneficiaries of these rates. Action 1.3 of this plan highlights the importance of undertaking studies to revise the metrics of the residential tariffs to be equitable, a key component of ARESEP’s 2017–2022 Strategic Plan (MINAE & IMAS, n.d., p. 29). The goals are to establish a residential tariff that specifically benefits these vulnerable social groups, develop a compensation mechanism that guarantees a financing system for these beneficiaries, and improve the condition of the electrical connection to families in poverty (MINAE & IMAS, n.d., p. 25). The plan will also address employment inequalities and promote the improvement of their social well-being to create a more sustainable approach to poverty reduction. ARESEP hopes to reach 54,600 families by the end of 2018 (MINAE & IMAS, n.d., p. 26).

4.4 SUMMARY OF EMPLOYMENT STRATEGIES

There are a variety of strategies energy regulators can take to integrate and retain more women employees within the workforce. These strategies help support recruitment, retention, and advancement of women within the labor force, counteracting discrimination and unlocking broader organizational potential through gender equity. Table 5 below provides a summary of key strategies, the challenges they address, and the potential value and outcomes of each.

⁸The Institution for Statistics held a conference with a focus on engendering household indicators to best understand the impacts of policy and regulatory frameworks, using disaggregated data. The Institute has already collected some statistical data but is looking to expand its data to find additional details of user groups, including women, which will help inform ARESEP.

Table 5: Framework for Energy Regulators: Gender Equity in Employment

Strategy	Description	Challenges Addressed	Potential Value/Outcomes
Workplace Protections	Implement protections for employees in the workplace, including sexual harassment and antidiscrimination policies, as well as enforcement protocols	<ul style="list-style-type: none"> • Unequal status in the workplace due to discrimination and cultural and social norms 	<ul style="list-style-type: none"> • Equal opportunities for job placement and promotions • Safer workplace environment, leading to greater productivity and employee retention
Enhanced Benefits*	Update human resources policies to be sensitive and respond to the needs of women employees, such as offering flexible time, parental leave, and childcare benefits	<ul style="list-style-type: none"> • Recruitment and retention of women in the workforce • Help employees balance between work and home commitments 	<ul style="list-style-type: none"> • Attract more women to energy sector positions • Improved retention for current employees
Continuing Education and Training for Women Employees*	Ensure that professional development opportunities extend to women employees	<ul style="list-style-type: none"> • Lack of skills and training opportunities • Fewer women in leadership positions 	<ul style="list-style-type: none"> • More highly trained workforce • Support for women advancing to leadership positions
Gender Awareness Training and Resources for Employees*	Provide employees with information on implicit gender biases within the workplace and the energy sector, as well as trainings on complying with human resources policies and national gender policies	<ul style="list-style-type: none"> • Lack of knowledge of gender inequality in the workplace • Lack of understanding why diverse staff matters for achieving organizational objectives 	<ul style="list-style-type: none"> • More knowledgeable staff and allies • Safer workplace for women • Cultural shift to tackle implicit biases
Hiring Quotas and Recruitment Targets*	Institute organizational hiring thresholds to encourage the recruitment of women for employment within commissions	<ul style="list-style-type: none"> • Unequal hiring due to discrimination, bias, and cultural norms 	<ul style="list-style-type: none"> • Increased hiring opportunities for women • Increased representation of qualified women within commissions

*Strategies are included within the Costa Rica Case Study

Box 7: Further Reading: Employment

For an example of a **sexual harassment and discrimination policy** to institutionalize practices around gender, guidance for utilities and developers on **building gender-inclusive organizations** can be found in ENERGIA's *Mainstreaming Gender in Energy Projects: A Practical Handbook* (Cecelski & Dutta, 2011).

SECTION 5 ENERGY POLICY AND REGULATION

Energy policy and regulation affects how women use energy, participate within the energy sector, and make energy choices. Incorporating gender into energy sector policies and regulations is still a new strategy for many countries, including for energy regulatory agencies. In many cases, energy regulatory commissions may have incorporated gender in their employment policies, but have not yet considered their role in advancing broader gender equity in the energy sector via regulatory policy. Therefore, this section focuses on how women are impacted by energy sector policy and regulatory frameworks, and suggests strategies energy regulators can use to create more equitable outcomes in the sector.

This section of the guide distinguishes between energy policies that national-level energy ministries can put in place and energy regulatory policies that regulators can enact. As a nascent area of energy regulation, gender inclusive policy examples from national energy ministries, rural electrification agencies, or other analogous sectors, such as the water sector, are highlighted for their cross-applicability to energy regulatory agencies.

KEY ISSUES

Main concepts energy regulators should consider when thinking about energy regulatory policy and gender include:

- Potential for inequitable impacts of energy regulations and decisions on women;
- How national gender policies can inform national energy policy and energy regulatory policy; and
- Tariff-setting strategies to ensure equitable access to energy for women.

5.1 CHALLENGES

Men and women may use energy differently, meaning that national energy policies and regulatory commissions' decisions can have different impacts on men and women. When making regulatory policies, energy regulators need to acknowledge existing biases, barriers, and data gaps that may prevent a full understanding of how energy regulatory policies impact women. For example, the limited participation of women in the energy sector, lack of data on the impacts of policies and regulations on women, and the overall gender blindness within the energy sector may impede the development and adoption of gender-sensitive regulations. Energy regulators, who are responsible for consumer interests, tariff-setting, licensing projects, and stakeholder processes, should be acutely interested in understanding their full utility consumer base to maintain credibility and grid performance. Specific challenges to gender-inclusive national energy policies and regulatory policy are outlined below.

Link between Energy Access,⁹ Poverty, and Health. Energy access, poverty alleviation, and health outcomes are closely linked and highly interdependent. Women’s income, health, and overall well-being can be highly influenced by access to energy, and women are more likely than men to face barriers to accessing electricity, as well as more adverse impacts from a lack of electricity (Rojas & Siles, 2015). For instance, in terms of income, female-headed households tend to have lower incomes than male-headed households. Having access to less disposable income can make it difficult, or impossible, to afford the cost of grid connection or household appliances that could reduce the drudgery of household work that often falls to women. The lack of disposable income combined with lack of access to energy, can perpetuate the cycle of poverty for women, especially in rural areas.

Furthermore, women are also more vulnerable to health issues arising from lack of energy access. In areas that rely on biofuels for cooking, women are more exposed to indoor air pollution, which is estimated to kill two million people annually—mostly women and children (Habtezion, 2012). Electrification can also provide specific benefits to women’s well-being. Study results have been mixed, but some point to street lighting improving nighttime security and access to lighting and technology at home improving access to information, household productivity, and income-generating opportunities (Hughes et al., 2013).

As a result, access to electricity and grid reliability are important assets to women. Policy and regulatory-decisions that lead to energy access via new grid connections or more affordable tariffs can bring about diversified and increased income streams for women, save time on household tasks, and improve health outcomes through more efficient and cleaner cooking technologies. For example, access to electricity in rural Guatemala has led to a 9-percent increase in female employment, and similar findings have been observed in Bhutan and Bangladesh (Köhlin et al., 2011). Other benefits from access to electricity can include safer streets through street lighting programs, access to information through telecommunications, and more opportunities for women to pursue education and work (Hughes et al., 2013). While rural electrification policies are often set by ministries of energy and implemented by rural electrification agencies, energy regulators can play a role in advancing gender in rural electrification policies through energy regulation (see Section 5.2).

Limitations of Influence. According to the World Bank Development Report, in 2010, women ministers in national governments were “twice as likely to hold a social portfolio than an economic one” and only 7 percent of women ministers’ portfolios¹⁰ included environment, natural resources, and energy (The World Bank, 2012). Cultural norms, discrimination, and relegation of women to these female spheres of social policy create barriers for women who could otherwise participate in energy policy and regulatory decisions. It is difficult for women to influence policies or regulations in energy, economy, or the environment, when they hold few decision-making positions in those spheres.

Furthermore, a lack of women’s representation in public offices and in private sector leadership positions result in significant “absence of women’s concerns from the main discourse and agenda for change” (Morris, 2015, p. 81). When women are excluded from energy planning and policy development, the result is “gender-blind energy planning of policies, financing, and execution” that may not account for gender differences (Habtezion, 2012, p.

⁹In the context of this challenge, energy access is defined as access to clean cooking fuels and electricity; recognizing that energy access is far more nuanced in terms of delivery, sustainability, reliability, and affordability. For more information on energy access and multi-tier definitions, please visit Sustainable Energy for All: https://www.seforall.org/sites/default/files/MTFpresentation_SE4ALL_April5.PDF

¹⁰Portfolios refer to the group of policies or programs that an energy minister is responsible for.

4). This can lead to energy interventions, policies, and regulations that do not meet the needs of all intended beneficiaries and can produce ineffective results (Morris, 2015, p. 49).

Limitations of National-Level Policy. Some countries have national gender policies, but they often do not apply to the energy sector (Pearl-Martinez, 2014). Conversely, energy frameworks and policies often do not address gender. For instance, in a scan of energy frameworks from 137 countries, only 32 percent contained keywords of “equality,” “equity,” “gender,” “sex,” “women,” “woman,” “female,” or “girl” (Prebble & Rojas, 2017). Additionally, few national policies address informal economic sectors, such as biofuel collection or food preparation, which women participate in heavily (Habtezion, 2012) (Pearl-Martinez, 2014).

Countries may also have national-level policies and regulations that create barriers for women as entrepreneurs and business owners in the energy sector and beyond. For instance, many gender-neutral laws, such as lengthy and complex registration, incorporation, and licensing practices¹¹ can be barriers to entry for women entrepreneurs (Simavi et al., 2010). In Niger, only 7 percent of the land is owned by women; this finding is not uncommon in other developing nations. Furthermore, to access finance in Niger, land or property ownership is often required to serve as collateral for loans (Morris, 2015). Lack of gender-sensitive national business regulations and energy regulations are key challenges for female entrepreneurs in the energy sector (Morris, 2015). In analogous sectors, policy has focused on enhancing women’s rights to property and addressing similar regulatory barriers that, if removed, could lead to greater gains in productivity (The World Bank, 2012).

Lack of Gender-Disaggregated Data. Most countries or regulatory authorities conduct studies on energy use, consumption, and reliability. These studies usually do not include the collection of demographic data, such as gender identity or sex, which means policies informed by this data may not adequately address the needs of both men and women. Additionally, the role of women as policy-makers and influencers, as well as employees and participants in informal economies, remain largely untracked. One of the consequences of the lack of gender-disaggregated data or analysis is the impediment of “efforts to recognize the need for, and design of, specific gender-focused interventions” (Hughes et al., 2013, p. 8). In countries where electrical grid access has been expanded, for example, if such efforts do not provide financial support for household connections, they can miss female-headed households, which tend to be the poorest and least-resourced to afford connection and electricity payments (Hughes et al., 2013, p. 8). This suggests that even well-intentioned policies can have gendered outcomes. Measuring gender-specific impacts of energy policy and regulatory decisions is difficult without segmenting existing data by gender and incorporating metrics related to gender in the monitoring and evaluation of initiatives and policies.

In addition, there may be limited collection of gender-disaggregated data because it is not required by a national policy or regulation. For example, many regulatory agencies have approved lifeline or low-income electricity tariff rates. The demand for these rates may have come from the national or local government, the utility, the public, the regulatory agency, or a combination. In developing these tariffs, gender considerations are typically not required, and as a result, agencies do not consider gender when evaluating the effectiveness or impact of the tariff rates (Advisory Committee, 2017).

¹¹This could include licenses to sell energy equipment, such as solar equipment, licenses to install solar equipment, or licenses to generate, distribute, and/or sell electricity.

5.1.1 SUMMARY OF CHALLENGES

Energy policy and regulations can have differential impacts on women than men, but gender-blind approaches to policy design do not account for these differences. Underrepresentation of women policy-makers may also contribute to limited perspectives of women within energy regulatory policy. Finally, limited gender-disaggregated data and metrics also make it difficult to set policy with equitable outcomes.

5.2 STRATEGIES

Regulatory commissions can pursue several types of interventions and solutions to create more equitable opportunities and outcomes through energy regulation. These solutions encompass specific external energy regulations and internal organization policies that incorporate gender.

Box 8: What Can an Energy Regulator Do?

Levers for Gender Equity in Energy Regulatory Policy

Energy regulators have a variety of levers and tools available to them to help promote gender equity through energy regulatory policy:

- Tariff-setting
- Data collection and reliability
- Stakeholder engagement and mediation
- Licensing requirements
- Monitoring and evaluation requirements

Collect Gender-Disaggregated Data to Understand Policy and Regulatory Impacts. To develop a baseline and understand any gendered outcomes of energy regulatory policies and programs, regulators and national agencies should collect gender-disaggregated data. For regulators, this could include gender-disaggregated data about customers, licensees, and those not yet served by the utility. Energy regulators can use this data to understand the gendered implications of specific regulations or policies. For example, regulators can use data to understand if there are differences in how men and women use electricity, how electricity prices affect women's energy use behavior compared to men, and what barriers women encounter in gaining access to electricity compared to men. Understanding these differences and gendered impacts of policy and regulation can help regulators develop and implement more effective policies and regulations that meet the needs of all customers. For example, in 2016, the Energy Regulation Board of Zambia conducted a survey for consumers on the quality of service and collected demographic information such as gender, marital status, and location to inform their work (Energy Regulation Board of Zambia, 2016). The ESMAP of the World Bank created a table of benefits from collecting gendered data and improving equity in measurement and verification procedures (see adapted version in Table 6).

Table 6: ESMAP's Value Added for Integrating Gender

Project Type	Options for Action/Monitoring	Value Added
Clean and Improved Cooking	Focus program design on the needs of women and girls who often have the responsibility for cooking.	Reduced incidence of adverse health impacts associated with traditional cooking methods; reduced time and effort to gather fuel for inefficient stoves may allow women and girls to participate in more productive activities.
Rural Electrification	Targeted financing mechanisms for female-headed households which may lack collateral/credit to pay for connection fees.	Attention to barriers specific to female-headed households can increase overall connection rate.
Energy Efficiency/Demand Management	Targeted information and training activities for women. As managers of the household (HH), women are often in a good position to monitor and manage electricity use within the HH.	Better HH demand management, less HH expense from excessive consumption, fewer disconnections.
Distribution Projects (loss reduction, consumer connections)	Women may spend more time in HH and can be impacted to a greater degree by reduced or improved HH service levels. Female-headed HHs may need targeted assistance for financing connections.	Increase overall connection rate. Women can be key partners in monitoring illegal connections to help lower losses.
Large Infrastructure	During resettlement/right-of-way payments consider dual spouse land titles and women's use of lands for informal livelihood.	Contributes to restoring livelihoods and income-generating opportunities for both men and women.
Energy Policy/Power Sector Reform	Explicitly look at gender impacts in Poverty Social and Impact Analysis (PSIA) for Development Policy Operations.	Mitigating impact on the most vulnerable.
Tariffs/Demand	In demand and willingness to pay studies, collect data from both the male and female heads in a HH.	Female and male preference on duration, time and value of electricity use may differ. For example, women may be more likely to use electricity in the HH during the day and in some countries women are the ones paying the bill.

Source: This table is originally from *Integrating Gender Considerations into Energy Operations* (Hughes et al., 2013).

Provide Tariff Options and Incentives. Energy regulators' jurisdiction includes designing and approving electric tariffs that reflect the cost of service, as well as protecting investor and consumer interests (UN Industrial Development Organization, 2009). To balance these demands, regulators must understand the needs of the consumer base and realities of service costs. Experts have noted that since women tend to be disproportionately

low income, strategies to reduce electric tariffs can support energy access for women (Advisory Committee, 2017). In evaluating the appropriateness of electric tariffs rates, regulators can do more work to understand the realities of their customer base. This includes collecting gender-disaggregated data in surveys aimed at understanding affordability of energy, reliability, and connection to the grid. This information can help inform regulators as they consider affordability of tariffs based on different customer income levels and household types (Maduekwe, 2018) (Rojas & Siles, 2015). For example, lower-income customers may have living situations where multiple households' energy use is collected via one meter, which could lead to higher usage charges depending on tariff structures. As regulators design and evaluate electricity tariffs, they can create tariff structures that help support low-income customers, of which a disproportionate number are women. For instance, regulators can design cost-reflective tariff rates and can allow utilities to subsidize energy tariffs through the rate base, provide financing options, or offer tiered billing models tied to income, if allowed by national laws. In some cases, national agencies, such as rural electrification agencies, may also subsidize energy costs for low-income households.

For example, Uruguay has a program that promotes access to modern energy sources by subsidizing electric tariffs for low-income customers. The state power company, the National Administration of Power Plans and Electrical Transmissions started to design social tariffs to subsidize energy costs for the low-income customer group. The result was the “Services Basket” program, which finances safe access to energy, energy efficiency, education in access management (e.g., paying bills, reading meters), and access to secure and efficient equipment for low-income customers (Rojas & Siles, 2015, p. 54).

Energy regulators can also approve income-based tariff models for utilities to provide additional services targeted at women, or national agencies can create these programs directly. For instance, the Lao PDR “Power to the Poor” program was created to support the country’s national electrification policy after recognizing that many households did not have access to financing to take advantage of electrification (Hughes et al., 2013). The program was created with a gender focus, and subsidized the cost of wiring and interconnection for poor households within Lao PDR. The program targeted female-headed households and worked with a local consultative process to identify which households to target. In the pilot phase of the program, the electrification rate among female-headed households in 20 towns went from 63 to 90 percent (Tang, 2012). By advancing the level of knowledge and identifying gender and economic disparities related to energy use, these programs were better able to serve communities and offer opportunities.

Link the Energy Sector to National Gender Policies and Regulations. Many countries globally have passed national gender policies. These policies aim to reduce inequity and build equality for women by addressing issues such as decision-making representation, increasing protections, reducing violence, and decreasing discrimination against women. However, historically, the application of these policies to the energy sector has been indirect or unclear. Energy regulators can complement national efforts by addressing gender in energy regulations. For example, energy regulators can address gender issues in regulations associated with rural electrification and support the inclusion of energy sector issues in the national gender policy (Hughes et al., 2013).

In addition, energy regulators can create a “focal point” or “gender unit” within their organization. This role is fulfilled by a dedicated individual who is responsible for overseeing and implementing gender policies (Rojas & Siles, 2015, p. 96). Energy regulatory agencies could look to the example of ministries of energy that have incorporated gender units into their institutions. For example, both the Ministries of Energy in Nicaragua and Uruguay have both created, respectively, a Gender Unit and an Equal Rights and Opportunities Commission.

These entities coordinate gender mainstreaming activities within the institutions and are responsible for advising and implementing gender-based approaches (Rojas & Siles, 2015).

Box 9: Regional Initiatives to Link Energy and Gender—Economic Community of West African States (ECOWAS) Policy for Gender Mainstreaming in Energy Access

Countries, regional entities, and development partners are actively seeking to improve gender equity while developing and implementing energy access policies and programs. Decision-makers recognize that without addressing the different needs and considerations of women in energy policy and regulation, it will be very challenging to meet countries' energy access goals. In a first of its kind initiative, ECOWAS is working at a regional level to mainstream gender into member states' national energy policies and regulations. The following section provides a brief overview of the ECOWAS initiative to date.

The ECOWAS Programme on Gender Mainstreaming in Energy Access was established in 2013 with the goal of working with its 15-member states to incorporate gender dimensions into policy and programs. The overall goal of the program is to “promote equality in energy development through equal access to resources and equal contribution to the decision-making processes that shape and influence energy expansion in West Africa” (ECOWAS, 2016).

In partnership with additional agencies and organizations, the ECOWAS Programme on Gender Mainstreaming in Energy Access developed the ECOWAS Policy for Gender Mainstreaming in Energy Access. The policy is intended to provide guidance to ECOWAS member states on setting national targets for gender participation within the energy sector. The targets should be aimed at supporting women's participation as key decision-makers and employees within the energy sector, providing women with equal opportunities, creating gender balance and inclusiveness within energy policies and initiatives, and creating monitoring and evaluation metrics to measure impacts of policies by gender. Currently, three ECOWAS member states with national gender policies address the energy sector (ECOWAS, 2016).

The ECOWAS Center for Renewable Energy and Energy Efficiency and the ECOWAS Department for Social Affairs is going a step further than just policy development and has developed a legal framework for the policy. This framework outlines the procedures for the designated national implementing agencies within the member states. This includes setting standards for gender assessments, enforcing the Policy for Gender Mainstreaming in Energy Access, and delineating responsibility and authorities among actors within the energy sector (ECOWAS Center for Renewable Energy and Energy Efficiency, 2015).

As countries continue to take strides in addressing gender equity issues in expanding energy access, it will be important to follow the progress of the ECOWAS initiative and consider how regional initiatives could support energy regulatory agencies in mainstreaming gender equity into their national policies and regulations.

5.3 COUNTRY SPOTLIGHTS

Many regulatory commissions worldwide have started integrating gender into regulation; recognizing benefits for governance, more informed decision-making, and reaching a broader consumer base. The spotlights below

highlight how regulatory authorities in Cabo Verde, Ghana, and Tanzania are beginning to integrate gender perspectives within their work such as through data collection, stakeholder engagement, employment, and tariff structuring.

5.3.1 REGULATORY REFORM IN CABO VERDE

Background/Context

Cabo Verde is an island nation lying 415 miles off the coast of Senegal. With nine inhabited islands, few natural resources, and no domestic energy sources, Cabo Verde relies mainly on costly diesel fuel imports to power its energy sector and on desalinization to provide access to clean water (Shaw, Bannerman, & Lobban, 2018). Desalinization requires significant energy resources, and the cost of importing diesel fuel for the national grid is one of the highest in Africa (Cassirer & Stoll, 2017). Additionally, 45 percent of all Cabo Verdean and many low-income households are headed by women, and are disproportionately large compared to households with higher income levels. Therefore, reducing the cost of water for these populations would directly benefit women (Millennium Challenge Corporation [MCC], 2014). Given this backdrop, Cabo Verde is aiming to reform their energy and water sectors to provide more affordable and increased access to these essential services.

In February 2012, the MCC, an independent U.S. foreign aid agency,¹² entered its second five-year Compact with the Government of Cabo Verde. This Compact focused on regulatory reforms and women's inclusion within the water and sanitation sector, concluding in November 2017. This case study profiles key lessons learned from the Compact that could be applied to the gender-inclusive regulatory approaches in the energy sector.

Applicable Water Sector Regulatory Reform and Women Inclusion Approaches

Working alongside the Government, the MCC helped create new water utility institutions at the national and local level. To do this, the Government launched the National Agency for Water and Sanitation. Recognizing the importance of including impacts on women and other vulnerable populations, it also created an Office of Environment and Gender and Social Integration within this new agency. This Office collaborates with other departments to include social and gender data in planning, policy discussions, and monitoring throughout the sector (Cassirer & Stoll, 2017). In parallel, local water utilities also consolidated their independently operated municipal and utility water services into one utility, Aguas de Santiago (AdS), for the island of Santiago (in which half of the country's population lives). The utility has created an Office of Information, Education and Communication, and Social, Gender, and Integrated Management to inform the other units within the utility. Furthermore, each construction contract to improve water infrastructure, carried out under this Compact, mandated that contractors have a 30-percent quota for women's employment, and each project has a specialist dedicated to ensuring this target is met (Cassirer & Hopkins, 2018).



Staff of the office within AdS, a newly formed local utility institution, dedicated to responding to women's needs. (Cassirer & Stoll, 2017)

¹²MCC forms partnerships with developing country governments to implement economic growth and poverty reduction projects through grants. Selected countries set up a Millennium Challenge Account run by local staff to implement the grants. One of these grants is a five-year compact. MCC has carried out two successful Compacts in Cabo Verde, the first from 2005 to 2010, and the second largely focused on the water and sanitation sector with approaches on regulation changes and women inclusion.

The Compact also created a new tariff policy to reduce water bills for low-income households and ensure that households not connected to the public water network will not have to pay more than those benefitting from the network's infrastructure. MCC also worked with the National Agency for Water and Sanitation to incorporate clauses on affordability for large families and how that affects their applicable tariff block (Cassirer & Hopkins 2018).

Outcomes of the Compact

Given the recent completion of the Compact, the results are still being collected and observed. However, several results have been reported including:

- **New connections.** There have been over 3,000 new connections to the water network since the Compact began (Cassirer & Stoll, 2017).
- **Significant improvements in water service.** In areas where MCC worked, the average available water hours per day more than doubled, from 6 hours to 14.6 hours, and “average water consumption nearly doubled from 20 liters per capita per day to 35 liters per capita per day” (MCC, 2017).
- **Women's employment.** The number of women employed by construction firms in the water sector increased from the national average of 3 to 22 percent (Cassirer & Hopkins, 2018).

In the coming 20 years, MCC expects almost 600,000 people to benefit from the Compact (Cassirer & Stoll, 2017).

Lessons Learned from the Compact

The work that the MCC completed in collaboration with Cabo Verde regulatory authorities serves as an example of how institutional reforms can have a strong and direct impact on women. Some of these reform concepts, while undertaken in the water and sanitation sector, can be applied to the energy sector. The initial result—including an increase in water connectivity, a doubling of water consumption, and the successful implementation of gender analysis informing sector actions—prove that these strategies can serve as best practices for utility regulators. If these practices were translated into the energy sector, they could include:

- **Creating a gender office or unit** to collaborate across departments and agencies to collect and incorporate gender-disaggregated data and consumer input from women into its reforms and policies;
- **Implementing pro-poor tariff policies** that target low-income and vulnerable households, such as women-led households, and create incentives for communities to interconnect to the grid, when possible; and
- **Incorporating women's employment** directly in the sector's construction project contracts, including an overseer of this process.



“Maria Jose, 70, enjoys running water at home for the first time.” (Cassirer & Stoll, 2017)

5.3.2 INTEGRATING GENDER INTO REGULATORY POLICY IN GHANA

Background

Over the last two decades, Ghana has made significant progress reducing poverty levels, improving women's equality, and expanding access to electricity. Ghana cut its poverty rate from 52.6 to 21.4 percent between 1991 and 2012; this is less than half the African average of 43 percent (Fosu, 2015). Ghana has made great strides on key gender equality indicators including reaching close to parity on youth literacy, school enrollment rates, and primary school completion rates (Ghana Power Compact, 2017). In addition, Ghana's electrification efforts have resulted in an electrification rate of 79 percent—one of the highest in Sub-Saharan Africa (The World Bank, 2018). Ghana is actively implementing gender and energy focused initiatives at the international, regional, national, and institutional levels (see Table 7).

Despite this progress, challenges remain. For instance, the proportion of employed men is 2.5 times greater than women (Ghana Power Compact, 2017). Ghana's electricity connection charge has tripled since 2011, which has increased the cost of electrification efforts, and female-headed households continue to earn less income and spend a higher percentage of their income on electricity (Millennium Development Authority [MiDA], 2017). Sustained poverty reduction will require a commitment to reducing inequality and improving access to



The Honorable Otiko Afisah Djaba, Minister of Gender, Children, and Social Protection at the launch of the Social and Gender Integration Plan. Source: (MiDA, 2017)

opportunities for all citizens (Fosu, 2015). Given these circumstances, the Government of Ghana continues to prioritize actions that reduce poverty, advance gender equality and equity, and increase access to energy.

In August 2014, the Republic of Ghana and the Millennium Challenge Corporation (MCC), an independent U.S. foreign aid agency, entered into the “Ghana Compact II” agreement, known as the Power Compact which aims to reduce poverty and increase economic growth by providing more reliable and affordable power through power sector reform and private sector participation. When the agreement entered-into-force in 2016, it signified the beginning of a 5-year timeline to transform Ghana’s power sector and create a sustainable pathway through development. The Government of Ghana designated the Millennium Development Authority (MiDA) to oversee, manage, and implement the Compact. MiDA is engaging several Implementing Entities (IEs) to carry out specific activities including the Electricity Company of Ghana, Northern Electricity Distribution Company, the Volta River Authority, the Public Utilities and Regulatory Commission, the Energy Commission, the Ministry of Energy, the Ghana Standard Authority, the Environmental Protection Agency, and the Lands Commission (MCC, 2017) (Sarfo & Fiadjoe, 2016).

A key component of the Power Compact is to further integrate gender and social inclusion into the energy sector. This case study provides details on MiDA’s efforts to strengthen and build the capacity of Ghana’s energy regulators, ensuring transparency and quality of service, as well as to integrate gender into their policies and practices (MiDA, 2017).

The Social and Gender Integration Plan

In accordance with the Republic of Ghana’s gender and social inclusion policies and MCC’s Gender Policy (2011), MiDA developed the Social and Gender Integration Plan (SGIP) as a means for integrating gender into the design, implementation, and monitoring and evaluation of the six projects under the Compact. The SGIP builds on the gender and social assessments and stakeholder consultations conducted during the Compact development phase, provides an in-depth gender and social analysis of Ghana’s energy sector, and outlines the specific gender and social inclusion interventions for each Compact project (MiDA, 2017). MiDA will oversee implementation of the action plan, which aims to ensure greater energy equality by addressing social inequalities among men, women, and vulnerable groups of citizens such as the elderly, socially excluded, and disabled. The launch of the SGIP in 2017 included a training for MiDA staff, implementing entities, MiDA consultants, and contractors.

To support the implementation of the SGIP, the Ministry of Gender, Child and Social Protection has signed a Memorandum of Understanding with MiDA, and implementing entities are responsible for establishing a gender focal person to coordinate and steer implementation of the gender and social inclusion activities. MiDA also established the Gender and Energy Working Group, representing key institutions from government, civil society organizations, and other stakeholders, to advise on implementation and monitoring of the SGIP. The working group will hold meetings every quarter to identify key lessons, challenges, and gaps in the Compact projects’ gender and social integration to improve their outcomes. Gender focal persons are expected to attend the working group to discuss any issues or challenges they are facing regarding implementation of the activities (Antwi-Nsiah, 2018) (MiDA, 2017).

Regulatory Strengthening and Capacity Building

Within the Power Compact, one project is focused on strengthening and building the capacity of Ghana’s electricity regulatory commissions. Its key objective is to strengthen the capacity of the commissions for performance monitoring and independent verification, ensuring service quality, and increasing transparency and accountability of the regulatory policy environment (MiDA, 2017). Ghana has two main independent regulatory

authorities in the energy sector; the Energy Commission and the Public Utilities Regulatory Commission (PURC). The Energy Commission is responsible for technical regulation of the power sector, including licensing of public and private operators, collecting and analyzing power sector data, and advising the Ministry of Energy on energy policy and planning. The PURC is responsible for economic regulation of the power sector, including approving electricity tariff rates for the electricity sold by distribution utilities and monitoring the quality of electricity services delivered to consumers. In approving tariffs and setting service quality standards, PURC must consider the financial stability of the utility companies and the impact on the poor and vulnerable, including women (Kumi, 2017). PURC is also responsible for monitoring the effectiveness of the lifeline tariff in benefiting vulnerable groups.



Participants at the launch of the Social and Gender Integration Plan. Source: (MiDA, 2017).

The social and gender analysis conducted during Compact development found that both the Energy Commission and the PURC could further integrate gender and social inclusion into their internal and external policies and decision-making processes. Specifically, the analysis demonstrated that PURC has little capacity to integrate gender and social issues into tariff approvals or quality of service decisions. As such, the regulatory strengthening and capacity-building project aims to incorporate gender equity and broader social issues into the regulatory commissions' human resources policies, tariff regulation, and other operational policies. Specific activities include (Ghana Power Compact, 2017):

- **Human Resources.** Undertake a comprehensive assessment and develop an action plan for the PURC and the Ministry of Energy (including the Energy Commission) to include gender and social inclusion into human resources policies and activities.
- **Tariff Reviews.** Developing a new tariff review plan that integrates gender and social considerations into PURC tariff reviews and monitoring activities. This includes training PURC staff in gender-disaggregated and disadvantaged group data collection and analysis, consulting with women and other vulnerable groups as part of the tariff review process, and partnering with other organizations to explain tariffs and electricity use options to household and business, with a special effort to reach women and disadvantaged groups.
- **Operations.** Developing and implementing a data collection, monitoring, and reporting system that includes gender and social information and building the gender and social sensitivity of all those involved in data collection, analysis, and monitoring and reporting.

These activities will help PURC and the Energy Commission work toward gender-balanced and socially inclusive staffing compositions, improve gender and social inclusion sensitivity in policy and regulatory work, collect better and more informative data, and address concerns of women and vulnerable groups in

tariff reviews. Through the implementation of these activities, PURC hopes to better inform low-income customers about tariff structures to support more informed energy decision-making (MiDA, 2017).

Lessons Learned

Since the Compact is still in its initial stages, program outcomes are forthcoming. However, the programs offer an example of how to integrate gender and social inclusion into many facets of the energy sector. Moreover, MiDA’s three-pronged approach of gaining early buy in and commitments from government, private sector, and civil society; focusing on implementation; and prioritizing monitoring and evaluation are ingredients for replication and program success (Agyepong, 2018). Based on its experiences in Ghana, MCC is beginning to implement similar initiatives in Liberia and Benin (Ruggles, 2017). It will be important to monitor and evaluate the progress of the power Compact to ensure it improves the affordability, reliability, and equity in energy service provision thereby reducing poverty and increasing economic growth in Ghana.

Table 7: A Summary of Ghana's Gender and Energy Activities

Activity	Description
International and Regional Activities	<ul style="list-style-type: none"> Member of Sustainable Energy for All, for which it has a national-level action agenda focused on universal access to sustainable energy. Participant and signatory to the ECOWAS Policy for Gender Mainstreaming in Energy Access (see Box 9). Ghana’s President, H.E. Nana Afuko-Addo, is the African Union Gender Champion and Co-chairperson of the UN Secretary General’s Sustainable Development Goals Advocates (Morris, 2015).
National Policies	<ul style="list-style-type: none"> National Gender Policy (2015): Explicitly includes strategies on women and energy (Ministry of Gender, Children, and Social Protection, 2015). National Energy Policy (2010): Section 8 is focused on gender and energy and includes a goal dedicated to mainstreaming gender into the energy sector (MiDA, 2017).
Institutional Activities	<ul style="list-style-type: none"> Ministry of Gender, Child, and Social Protection: Responsible for ensuring equal opportunities for both men and women, including equal electricity access, and requires all other Ghanaian Ministries to include gender budgeting in their proposed expenditures (Arthur-Mensah, 2017). The Electricity Company of Ghana, the Northern Electricity Distribution Company, and the Ministry of Energy have conducted gender audits (Morris et al., 2015). In accordance with the national gender and social protection policies, the Ministry of Energy has developed GAPS and has appointed a gender focal point/unit (Agyarko, n.d.) (Morris et al., 2015). The Electricity Company of Ghana has an internal women’s empowerment group, the Power Queens, which has pushed for gender equality for over 25 years (MiDA, 2017).

5.3.3 MAINSTREAMING GENDER INTO REGULATION IN TANZANIA

Overview of the Energy and Gender Situation in Tanzania

The east-African country of Tanzania aims to become a middle-income country by 2025, with the energy sector playing a vital strategic role in the economic development. Currently, approximately 24 percent of the population has access to electricity, with rural areas at a lower level of 7 percent (Uisso & Erneus, n.d.). Demand for electricity is growing 10 to 15 percent per year (Ministry of Energy and Minerals, 2015); however energy consumption per capita is one of the lowest in Sub-Saharan Africa (Kigodi & Poncian, 2013). Despite recent efforts to reduce the cost of electrification for rural areas, electric tariff rates are still higher than in urban areas. Women largely earn lower incomes than men, and thus are disproportionately affected by electricity costs (Secretariat of the African Community of Practice on Management for Development Results, 2017). To increase gender equity and to support its economic goals, the Tanzanian Government aims to expand electrification by harnessing its renewable energy sources (African Development Bank Group, 2015).

Overview of Current Policies and Programs Supporting Gender Mainstreaming in the Energy Sector

The Government of Tanzania is taking considerable steps to integrate gender into its energy sector. These efforts include integrating gender perspectives into national energy, economic, social, and development laws, policies, and frameworks as well as government institutions. For example, the Rural Energy Agency (REA), founded by the 2005 Rural Energy Act, has a Gender Integration Strategy that includes a gender and energy initiative. The initiative is supported by the World Bank, Africa Renewable Energy Access Program, and the UN Sustainable Energy for All initiative (Kafanabo & Nderumaki, 2018), and aims to mainstream gender in the REA's programming (Uisso & Erneus, n.d.). To achieve this, the program will conduct organizational and project level gender assessments. Organizational assessments will include conducting surveys on how gender is currently addressed with REA management and staff, reviewing all REA documents from a gender perspective and holding interviews and focus groups (Uisso & Erneus, n.d.). Project assessments will include conducting field visits of certain REA projects to complete an in-depth gender assessment. The REA's assessments will result in skills trainings for women in construction and the creation of a capacity-building plan for REA staff and project developers, including a gender monitoring and evaluation framework (Uisso & Erneus, n.d.).

The REA recently worked with the rural village of Zanzui in Maswa District to provide electricity access. After gaining access to electricity, a village business invested in an electric miller providing milling services to village farmers. Previously, villagers relied on an expensive diesel-powered miller located in a neighboring village. Since having access to the local electric miller, villagers, especially women, have saved time and money. The REA's rural electrification programs and integration of community-run electricity projects have consequently allowed women to pursue small enterprises and other income-generating activities by reducing time poverty (International Institute for Sustainable Development, 2016, p. 8).

In 2015, the Government of Tanzania also established the National Energy Policy, which includes multiple strategies to promote the participation of women in energy-related activities. These strategies include: enabling the formation of women's groups; holding trainings and creating employment opportunities to promote awareness of the different roles men and women have; and improving equality on both the demand and supply sides of the energy sector (Government of Tanzania, 2015, p. 48). The Ministry of Energy and Minerals Strategic Plan of 2011–2016 also highlights the importance of increasing social welfare through a sufficient supply of energy (Secretariat of the African Community of Practice on Management for Development Results, 2017).

Despite these steps, experts still note that the Government has experienced challenges in putting its gender mainstreaming policies into practice, in part due to the patriarchal culture that dominates the country (Secretariat of the African Community of Practice on Management for Development Results, 2017). Patriarchal culture often limits the role that women have in decision making due to “high levels of intra-household inequality” (IISD, 2016) and contributes to the differing ways men and women use electricity. Nevertheless, the Government continues to support mainstreaming gender in the energy sector.



Intern in Tanzania gains skills in monitoring. EWURA is a host organization for NARUC's Women in Energy Regulation Pilot Internship Program (NARUC).

Introduction of EWURA and Their Role in the Energy Sector

The Ministry of Energy and Minerals established the multi-sectoral EWURA in 2006 by the EWURA Act Cap 414. EWURA is responsible for technical and economic regulation of the electricity, petroleum, natural gas, and water sectors in Tanzania. The functions of EWURA include licensing, tariff review, and monitoring performance and standards with regards to quality, safety, health, and the environment. EWURA is also responsible for promoting effective competition and economic efficiency, and protecting the interests of all, including low-income, rural, and disadvantaged consumers (Energy and Water Utilities Regulatory Authority [EWURA], 2017).

Previously, EWURA implemented a gender inequality and mainstreaming policy to address inequalities in the energy sector. Despite this effort, the agency found that there was a lack of action and awareness. In its current Strategic Plan 2017–2022, EWURA again highlighted a priority to develop and implement a new gender policy in its operations. This gender policy was initiated in 2017 and will be revised in 2019–2020, or every two years (EWURA, 2017).

Rationale for a Gender Policy

EWURA developed its gender policy as a response to its commitment to protecting and promoting human rights in its work. It recognizes that increasing awareness of gender equality and the different roles that women and men play is essential to promoting human rights. Since its inception in 2006, EWURA noticed that a successful gender focus was missing from its plans and created this policy to ensure women’s needs and interests are at the forefront of decision making and serve as a guide for how best to promote gender equity in the energy sector (EWURA, 2017).

Main Goals of the Policy

The overarching goal of the gender policy is to bring about gender equity in the sector while eradicating inequalities and discrimination (EWURA, 2017). Specifically, the policy aims to develop a framework for gender integration into the authority by creating equal opportunities in terms of employment and ensuring a gender balance in decision making. This framework will include mandating gender responsiveness throughout both regulatory functions and organizational systems and policies (EWURA, 2017). For example, EWURA plans to monitor the effects of the current electricity tariffs on women. To do so, EWURA will begin collecting, analyzing, and monitoring gender-disaggregated data (Kafanabo & Nderumaki, 2018). In addition, the policy establishes a gender focal person within the authority, who will be responsible for developing gender programs, serving as a representative and contact for the authority, and providing updates on tools and best practices on gender in employment and regulatory development. The policy also lays out specific roles for different positions and departments within EWURA, including the board of director, director general, human resources, divisional directors, unit heads, and individual staff. The policy requires all staff to show a willingness to incorporate gender issues in their daily work and behavior (EWURA, 2017).

EWURA’s Next Steps for Implementing the Policy

Currently, the gender policy includes a series of high-level strategies including raising awareness among staff and other key stakeholders on the gender policy and the importance of gender matters, reviewing EWURA’s regulatory and management tools to incorporate gender, making sure key position holders understand their roles and responsibility, and ensuring that gender is included in the EWURA strategic plan and that resources are allocated for implementation. As a next step, the authority will develop specific targets and indicators to meet the goals and objectives of the policy. To monitor and evaluate progress, the authority will identify ways in which the gender policy can be integrated within existing monitoring and evaluation systems. At this stage, EWURA will evaluate the progress of the policy implementation through the following indicators:

- **Gender-disaggregated data:** using disaggregated data in all aspects of operations;
- **Women participating in decision making:** tracking and improving the percentage of women participating in decision making and in working groups/committees;
- **Gender-responsive plans and policies:** enhancing the proportion of plans and policies that are gender responsive; and
- **Discrimination and harassment:** a reduction in the amount of discrimination or harassment cases that are reported (EWURA, 2017).

Additionally, EWURA is working with technical partners to help the authority integrate gender mainstreaming within its corporate policies and practices to achieve similar organizational goals. The authority will use the disaggregated data to ensure that gender perspectives are incorporated in investment requests from utilities, and to adjust the tariff to be more effective in serving both genders (Kafanabo & Nderumaki, 2018). The authority is intending to provide technical training sessions for women employees and will draw from other sectors' strategies on gender mainstreaming.

Lessons Learned from the Gender Policy

EWURA's gender policy provides a concrete example of how a regulatory authority can develop and implement an institutional gender policy that is aligned with national-level objectives. Some specific aspects of the policy that could be replicated by other regulators include:

- **Create a strategic plan** that includes the formation of a gender policy that addresses gender mainstreaming strategies for regulatory operations.
- **Establish a gender focal person** within the authority to oversee and spearhead gender mainstreaming activities, programs, and tools.
- **Analyze the gender impacts of tariffs** developed through collecting gender-disaggregated data.
- **Conduct gender assessments** to inform policies and projects both within and outside the organization.
- **Incorporate antidiscrimination guidelines** and enforcement mechanisms in the regulatory authority.

5.4 SUMMARY OF ENERGY REGULATORY STRATEGIES

Energy supports daily lives and the key functions of society. Energy access is closely linked to the health, safety, and productivity of individuals and communities. Energy regulators can promote energy access and gender equity for end users by collecting data to understand rate impacts, authorizing tariffs to ensure women in low-income households can afford energy, and supporting national gender policies to increase the representation of women within governmental and regulatory entities.

Table 8: Framework for Regulators: Energy Regulatory Policy

Strategy	Description	Challenges Addressed	Potential Value/Outcomes
Income-Based Electricity Tariffs and Incentives	Use customer-level income and gender-disaggregated data to support the creation of tariff structures that provide more affordable electricity to low-income households and design electrification programs that lower the cost of interconnection for poor households	<ul style="list-style-type: none"> Energy access, poverty, and health 	<ul style="list-style-type: none"> Reduce negative health effects by providing electricity access Reduce drudgery so women have more time to access additional livelihoods or education
Link the Energy Sector to National Gender Policies	Ensure that national or local objectives for the energy sector are included in national gender policies, and that national objectives for gender are reflected in energy policy and strategic planning of national ministries and regulatory commissions	<ul style="list-style-type: none"> Limitations of national-level policy Limitations of influence 	<ul style="list-style-type: none"> Harmonizes national policy and regulatory frameworks Makes meeting energy sector objectives a goal for stakeholders outside the energy sector Makes gender equity a goal for stakeholders within the energy sector
Collect Gender-Disaggregated Data	Collect customer data that is gender disaggregated and use the data to inform regulatory policy design	<ul style="list-style-type: none"> Lack of gender disaggregated data 	<ul style="list-style-type: none"> Allows for the design of policies and regulatory frameworks that address gender disparities

Box 10: Further Reading: Energy Regulatory Policy

- *Integrating Gender Considerations into Energy Operations* (2013) provides a table of specific values created by incorporating and measuring gender dimensions within different project and policy initiatives within the energy sector.
- For examples of **policy instruments to close gender gaps** in the energy sector, see the 2016 *Policy for Gender Mainstreaming in Energy Access* developed by ECOWAS.

SECTION 6 INFRASTRUCTURE

Large energy infrastructure projects have inevitable impacts on local communities. Many of the strategies outlined in this section can be implemented by a variety of organizations, including government entities, developers, international and domestic NGOs, and regulatory agencies. However, energy regulators have several levers available to them to reduce the impacts of energy generation, transmission, and distribution projects on women and to help ensure a more equitable distribution of project benefits. For example, regulatory agencies often have the authority to protect consumer and investor interests by setting requirements and reviewing social and environmental impact assessments. Regulators also have convening power, which can enable commissions to successfully host or require stakeholder consultations on infrastructure projects. Last, regulators may also have the authority to approve or deny energy projects, and can incorporate principles of gender equity and sustainability into project review and licensing. This chapter highlights successful strategies that have been deployed to improve infrastructure development outcomes for women that can be adapted for use in many regulatory contexts.

Research indicates that involving women during infrastructure project development can reduce disparate impacts on both men and women, potentially boosting productivity, efficiency, and return on investment, and therefore minimizing cause for consumer and investor disputes (Pearl-Martinez, 2014). For example, in a review of the World Bank infrastructure projects, women's participation was found to improve "governance, management, cost recovery, and production" and "creates an improved work environment, with less violence and drinking in project sites" (Cecelski & Dutta, 2011, p. 14). Additionally, experts point to the importance of engaging women throughout the energy value chain, noting that gender-sensitive clean energy investments can create a "broader consumer base for energy supply, enhanced operations through gender balance in technical positions and women-led vendors and suppliers, [and] greater community ownership of clean energy facilities" (Pearl-Martinez, 2014, p. 32). Nevertheless, women may not be considered or included in large infrastructure development and are more likely to be left out of the educational and economic opportunities presented by generation, distribution, and transmission projects (Pearl-Martinez, 2014).

This section provides energy regulators with an overview of the impacts of large energy infrastructure projects on women and introduces a set of strategies that could more meaningfully involve women in project development decision-making processes, improving overall project and gender outcomes. It also includes an in-depth case study on building gender infrastructure in large hydropower project development in Lao PDR.

KEY ISSUES

To promote gender equity in infrastructure projects, regulators should understand the following concepts:

- What methods will allow women to meaningfully participate and share input in project stakeholder consultations.
- How land use needs for large energy infrastructure projects impact women, including resettlement and compensation.
- How infrastructure projects can impact health and safety of women and local communities.
- Opportunities to employ women in the economic activity in and around a large infrastructure project.

6.1 CHALLENGES

There are a number of key areas developers, government agencies, and energy regulatory commissions should be aware of during infrastructure project development. The issue areas below highlight ways that infrastructure project development impacts can have disproportionate impacts on women.

Resource Use. Usage patterns of natural resources, such as land and water, influence how the benefits of energy projects will be distributed and how the consequences of such projects are experienced by men and women (Pearl-Martinez, 2014). For example, projects that require a large land area may impact community members who may have been using the land for their livelihoods via farming, grazing, fuel gathering, or other uses. Furthermore, projects that utilize or remove local water and forest resources (e.g., hydropower dams and wind farms) have a greater impact on women in areas where women are responsible for collecting water, fuel wood, and other traditional energy sources. Globally, women spend “from 2 to 20 or more hours a week” on these tasks than men (Mohideen & Tanaka, 2012, p. 1).

Resettlement and Compensation. Large energy projects may require some individuals or communities to resettle. In such cases, the impacts of resettlement and compensation may differ between men and women, largely due to gender inequalities in land ownership and rights. Inequality in land ownership and control between men and women is widespread across many countries (Morris, 2015) (Pearl-Martinez, 2014). Women are often discriminated against in matters of land ownership due to a lack of cultural acceptance of their land rights, or due to lack of any land ownership rights. Although civil and statutory laws often declare that spouses are equal proprietors of land, hence protecting women’s rights to own and inherit land, these laws are largely ignored in practice (Pearl-Martinez, 2014). As such, women may not receive adequate compensation if a project requires relocation, since compensation is typically provided based on land ownership (Hughes et al., 2013).

Health and Safety. Large infrastructure projects often bring an influx of temporary workers to a local community. The influx of transient workers has impacts on the health and safety of women and has been linked to the spread of sexually transmitted infections in areas where large infrastructure projects are being developed (Hughes et al., 2013) (Pearl-Martinez, 2014). These projects can also bring needed infrastructure to communities

in ways that differentially impact women. For instance, energy infrastructure can provide electrification to rural or resettled communities. In areas that are primarily dependent on biofuels for energy, electrification may provide women with cleaner cooking technologies and immediate health and productivity benefits. Women may spend more time cooking—in the case of three ECOWAS member states in West Africa, up to 35 times more minutes daily than men (ECOWAS, 2016). Studies have shown that open fires and simple biomass burning stoves contribute to 3.8 million premature deaths annually from household air pollution (World Health Organization, 2016).

Existing Socioeconomic Constraints to Participation. Women are disproportionately represented in low-income segments of society. The ability for women to participate in stakeholder processes or influence policy can be limited by time poverty, which “has been increasingly recognized as a dimension of poverty, especially amongst women and the associated drudgery of their tasks” and by other responsibilities, such as occupation, childcare, and domestic duties (Hughes et al., 2013, p. 8). As a result of these responsibilities and constraints, it may be difficult for women to participate in stakeholder meetings. Additionally, language and literacy barriers may also preclude community members from consultation processes; especially women if they have received less formal education (see Section 6.3).

Employment Opportunities. Large infrastructure projects generate sizeable local employment opportunities, such as jobs in installation and operation of the power generation plant. Nonetheless, women are not always able to take full advantage of these opportunities. Cultural views of women’s roles prevent women from going after jobs in the energy infrastructure sector that are traditionally held by men (Pearl-Martinez, 2014). For example, a study conducted in India found that “people believed that women construction workers were unfit to acquire skills for advanced masonry work, despite the fact that their capability and desire to progress into these jobs were equal to men” (Pearl-Martinez, 2014, p. 49).

6.1.1 SUMMARY OF CHALLENGES

Energy regulatory commissions and other government agencies with jurisdiction over energy infrastructure projects should consider a variety of potential impacts on women from energy projects. These include existing and future access to natural resources, resettlement or land use changes, and community health and safety, both during project development and over the long term. Additionally, regulatory agencies may face barriers involving women within stakeholder consultation processes due to their other responsibilities within their households, communities, or workplaces. Despite these challenges, there are a variety of ways energy regulators and government agencies can encourage and facilitate the participation of women within infrastructure projects to include their perspectives and mitigate adverse outcomes.

6.2 STRATEGIES

This section outlines approaches to engage and integrate women into energy infrastructure project development and decision making. Example strategies include direct engagement and consultation of women, gender-sensitive project assessment practices, targeted education and training programs, direct participation of women in decision making, and employment of women in the workforce to conduct outreach to women stakeholders.

Box 11: What Can an Energy Regulator Do?

Levers for Gender Equity in Infrastructure Projects

Energy regulators have a variety of levers and tools available to them to help promote gender equity during the development of energy infrastructure projects. The applicability of some of these strategies will depend on the regulators' purview over project appraisal and implementation:

- Ensuring that stakeholder engagement processes allow for the meaningful engagement of women and consider gender equitable outcomes
- Using mediation to resolve disputes
- Designing licensing requirements and procurement processes to provide opportunities for women-owned businesses
- Requiring monitoring and evaluation of projects to incorporate gender

Transparent Stakeholder Engagement Processes that Consult Women throughout the Project Planning and Development Process. Energy regulatory agencies should actively seek to engage women in stakeholder processes throughout the infrastructure project design and planning phases. Regulatory commissions can require that project developers engage stakeholders who will be impacted by their project and/or oversee the engagement process. Through successful participation, women can discuss how the project may impact them and their community, identify areas of concern, and identify core needs from a project. Several handbooks exist on stakeholder engagement for energy infrastructure, including how to effectively structure and implement gender-inclusive stakeholder engagement processes (see Box 12).

Box 12: Consultative Processes for Infrastructure Projects

Organization	Short Description
ESMAP (2013)	<i>Integrating Gender Considerations into Energy Operations</i> provides a framework for assessing gender issues, risks, constraints, and opportunities associated with energy projects.
Asian Development Bank (2012)	<i>Gender Tool Kit: Energy Going Beyond the Meter</i> outlines approaches to address gender issues at each phase of a project development cycle to move toward more gender-responsive energy infrastructure and services.
ENERGIA (2011)	<i>Mainstreaming Gender in Energy Projects: A Practical Handbook</i> describes considerations for implementing energy projects in developing countries and suggests processes for developing a gender action plan for energy projects.

For example, stakeholder processes should be structured so participants know how their input will be considered and used by decision-makers. In line with NARUC's *Principles for Effective Regulation*, energy regulators can also promote outcomes for women through their regulatory policies, such as licensing. For instance, as part

of the licensing process for energy infrastructure projects, regulators can require developers to submit stakeholder consultation plans with thresholds for women’s participation within the environmental and social impact assessments. Regulators can also require public hearings and announcements throughout the project planning and construction process to ensure participation.

Capacity Building for Women. Energy regulatory commissions can work with local communities to provide trainings for women on negotiation, leadership, and effective participation in stakeholder processes. These trainings can support women during stakeholder engagement processes, ensuring women feel empowered to voice their opinions and preferences for a project.

Monitor and Evaluate Gender-Specific Impacts. Monitoring and evaluation is a critical step to ensure project development is impacting affected communities as agreed upon during the project approval phase. To support implementation, regulatory commissions can require that project developers hire third-party auditors to collect gender-disaggregated data on overall project impacts, identify a gender expert to develop indicators and oversee monitoring efforts, or work with women’s groups to train women on how to provide project feedback. For example, in Botswana, the Botswana Power Corporation utilized gender-disaggregated data to understand grid connections. From this survey, they learned that over half of their potential market consisted of female-headed households and were connected to the grid at “half the rate of male-headed households” (Cecelski & Dutta, 2011). ENERGIJA’s *Mainstreaming Gender in Energy Projects: A Practical Handbook* provides guidance for engendering monitoring and evaluation indicators, as well as strategies for disaggregating findings (Cecelski & Dutta, 2011). For more examples of these interventions, see Section 6.3.

Table 9: Example Key Questions for Gender Analysis

Example Issue	Example Key Questions	Data to Collect
Employment Opportunities	<ul style="list-style-type: none"> • Are women currently employed in the sector? • Can the project offer jobs for women (e.g., construction labor, project management staff, meter readers, customer service agents, office clerks, additional employment in energy corporations)? 	Percent of women among employees (if possible by level)
Work Environment	<ul style="list-style-type: none"> • Do energy corporations apply labor and safety standards? • Do they have a good track record of gender-equal human resource strategy? • Can the project improve on the above? 	Human resources strategy of energy utilities and agencies promoting gender equality

Source: These questions are taken directly from the Asian Development Bank’s *Gender Tool Kit: Energy: Going Beyond the Meter* (Mohideen & Tanaka, 2012).

Hire Women as Employees. Hiring women to develop energy infrastructure projects will help create a more representative workforce to plan and implement projects (Advisory Committee, 2017). If within their authority, regulatory commissions can set quotas for hiring for projects or encourage diverse employment practices via project approval processes. Mohideen and Tanaka (2012) provide guiding questions for developers and energy

agencies to understand both the opportunities to employ women, as well as understanding the current representation within the organization. A subset of these questions is available in Table 9.

Create Opportunities for Women in Procurement Requirements. Where their authority allows, energy regulators can also create procurement policies that include a preference for women-owned or gender-certified businesses as vendors, suppliers, and subcontractors in development projects—helping to further female participation within the value chain (Advisory Committee, 2017) (Pearl-Martinez, 2014).

6.3 CASE STUDY: LAO PDR

OVERVIEW

The rapid development of the hydropower sector in Lao PDR has provided an opportunity for the Government, civil society, foreign investors, and the hydropower sector to embed principles of sustainability and gender equity into the project development process. Overall, hydropower development in Lao PDR can offer lessons for energy regulators worldwide on ways to ensure inclusion of women into energy infrastructure development. In many cases the Ministry of Natural Resources and Environment, as well as the Ministry of Energy and Mines, fulfill some of the equivalent roles of that of an energy regulatory commission: balancing consumer and investor interests, long-term planning, regulating and requiring standards for energy infrastructure development, and instituting a claims process for grievances. The approaches taken in Lao PDR are replicable in many country contexts, and the organizations operating within Lao PDR have equivalent organizations in other country contexts.

6.3.1 THE LAO PDR ENERGY SECTOR

Lao People's Democratic Republic (Lao PDR) is an ethnically diverse lower-middle income country located in the lower Mekong River Basin in Southeast Asia (The World Bank, 2018). In early 2018, Lao PDR fulfilled the national gross income per capita and the Human Assets Index requirements to graduate from the UN status of "Least Developed Country" and continues to make progress toward an expected graduation in 2021 (United Nations in Lao PDR, 2018). Over the past several decades, hydropower and infrastructure development have been one of the primary drivers of the country's economy (GiZ, n.d.a) (International Hydropower Association, 2016). Lao PDR has several different policy goals and objectives, which have driven hydropower project development. These include a goal of 90-percent electrification by 2020 and a small-scale hydropower target of 134 MW by 2020 (Kouphokham, 2016) (Resurreccion & Boyland, 2017). To date, Lao PDR has developed 4.168 gigawatts (GW) of hydropower for domestic and export use (International Hydropower Association, 2016). Lao PDR's significant hydropower potential and centralized location within the Lower Mekong region have attracted developers and international investment. Lao PDR has been nicknamed a "battery for Asia," with an estimated potential of 18 GW of exportable hydropower energy for neighboring countries (Ferrie, 2010) (GE Reports, 2016) (International Hydropower Association, 2016) (Roberts & Sager, 2016). After Lao PDR instituted market reforms in 1993, a significant influx of foreign investment spurred hydropower growth. In 2015 alone, Lao PDR added 599 MW of additional hydropower capacity (International Hydropower Association, 2016).



Community members on the Nakai Plateau, (Nam Theun 2 Power Company [NTPC], n.d.).

The rapid growth of the hydropower industry has incentivized the government, regional authorities, civil society, and international donors to encourage the sustainable development of hydropower resources. Communities near large-scale hydropower construction sites often must be permanently relocated and resettled during the period of dam construction and after the creation of a reservoir. This process has significant social and economic implications for impacted communities. At present, Lao PDR law requires hydropower developers to create resettlement agreements and compensate communities. In addition to compensation, resettled villages can sometimes benefit from easier access to critical resources such as healthcare facilities, schools, and transit as well as alternative livelihood training for jobs in new industries. However, resettlement can have differentiated impacts for women, and in Lao PDR, these impacts can be complicated by cultural differences and language barriers across the country's 49 ethnic groups (Allen, 2018) (Gallagher & Nouansyvong, 2018) (Geheb & Sayatham, 2018) (Krahn, 2018) (Manorom, Baird, & Shoemaker, 2017) (Sensathith, 2018) (Thippawong, 2018). Given these tradeoffs, sustainable hydropower development seeks to balance the economic benefits of infrastructure with the social and environmental impacts of resettlement and river diversion. The rapid development of the sector prompted multisector action to promote policy changes and reforms. The push toward a more sustainable hydropower sector was demonstrated through the development of the 2016 sustainable hydropower plan (Ministry of Energy and Mines, Lao PDR, 2015). The plan outlines requirements for approval of hydropower projects and requires projects to submit safeguard analyses, environmental and social

impact assessments,¹³ and resettlement and compensation plans. In the same year, the National Assembly updated the decree on compensation and resettlement in development projects, which requires developers to provide fair compensation to resettled communities and individuals, and provide for alternative livelihoods and incomes (Government of Lao PDR, 2016). To date, implementation processes of these policies have had a select focus on alleviating negative impacts on women.

Excerpt from Policy Guidelines for the Implementation of Policy on Sustainable Hydropower Development in Lao PDR, Section 5.8

“In order to safeguard the statutory interests of the project affected people due to resettlement and compensation cases, the hydropower project developer shall provide a progress report on the social impact assessment [and] develop a resettlement and livelihoods’ improvement plan, an ethnicity development plan, a gender development plan and so forth before the construction and implementation of the project to ensure that any potential negatives [sic.] impacts to the people and other social related impacts are mitigated” (Ministry of Energy and Mines, Lao PDR, 2015).

Lao PDR has also taken steps toward promoting gender equality and women’s empowerment more broadly. In 1981, the country committed to the UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and has established national and subnational goals on CEDAW through the 2006–2010 National Strategy for the Advancement of Women and subsequent updates. Lao PDR has established a National Commission on the Advancement of Women, focused on implementing CEDAW throughout government entities, and passed a law charging the Lao Women’s Union (LWU) with working toward gender equality, women’s rights, and meeting UN Sustainable Development Goals (Thinkeomeuangneua, 2016). The LWU is one of the only government actors active across all levels of government in Lao PDR from the central to the village level (Government of Lao PDR, 2010).

Efforts led by coalitions of stakeholders across government, finance, industry, civil society, and international development agencies have sought to build upon Lao PDR’s existing legal frameworks to support stronger implementation and incorporation of gender into social impact assessments for hydropower development, resettlement agreements, and resettlement planning in villages. The responsibility for regulating hydropower developments and incorporating social and environmental considerations is shared between national and regional actors. Of note, Lao PDR does not have an independent energy regulatory authority, and the actions of these agencies correspond to the roles of energy regulators in other country contexts. Table 10 below describes key government agencies and organizations involved in the environmental and social aspects of hydropower development.

¹³UN Environment Programme defines environmental and social impact assessments as “a tool used to identify the environmental, social and economic impacts of a project prior to decision making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment, and present the predictions and options to decision-makers. By using [environmental and social impact assessments], both environmental and economic benefits can be achieved, such as reduced cost and time of project implementation and design, avoided treatment/clean-up costs and impacts of laws and regulations” (United Nations Convention on Biological Diversity, n.d.).

Table 10: Role of Authorities

Actor	Large-Scale Hydropower Oversight (15 MW+)
Ministry of Energy and Mines, Lao PDR	Provides final project approval after reviewing technical elements of resettlement agreement terms
Ministry of Natural Resources and Environment, Lao PDR	Reviews environmental and social impact assessments for proposed infrastructure projects and can require changes to projects
Lao Holding State Enterprise	State-owned company that invests in energy infrastructure projects on behalf of the Government of Lao PDR
Mekong River Commission, Intergovernmental Regional Organization	Provides forums for feedback on social and technical impacts of proposed infrastructure projects with transboundary impacts

The influence of national policies, and the focus of international organizations on environmental and social impacts, as well as transnational interests, have led to some key interventions within the hydropower sector to promote equity for women and minimize impacts from energy infrastructure development.

6.3.2 GENDER-BASED INTERVENTIONS

A coalition of actors in Lao PDR has advanced gender equity in hydropower and other major infrastructure development through project assessments, project planning and development, and resettlement interventions. The key strategies highlighted here come from two hydropower projects completed in Lao PDR, Nam Theun II, and Theun-Hinboun. These are described in Table 11 .

6.3.2.1 Project Assessment

Project assessments help reveal impacts on communities and can be undertaken to specifically understand impacts on women. Results can inform changes to project approaches to mitigate impacts. The interventions outlined below provide examples of how hydropower developers have been responsive to gender concerns during the project planning phase.

Transboundary Assessments: In practice, gender impact assessments are often focused on the impacts at the project site. However, gender impacts can occur downstream from development, meaning that transboundary assessments are important for assessing broader geographic gender impacts of projects. In Lao PDR, the Mekong River Commission is a regional organization that provides a forum for its member and observing countries to provide feedback on transboundary impacts of hydropower sites located on the Mekong River through its Procedures for Notification and Prior Consultation and Agreement (PNPCA) procedures

(Mekong River Commission, 2017). In its most recent consultation on the Pak Beng Dam,¹⁴ the project developer submitted a social impact assessment, which disaggregated anticipated impacts on women from the project. During the PNPCA stakeholder meeting reviewing the dam, participants expressed concerns that the developer’s assessments did not adequately account for transboundary gender impacts and advocated for changes to the project (Kittikhoun, 2018). Transboundary issues represent the next phase in sophistication of gender analyses for these types of infrastructure projects.

Table II: Example Hydropower Projects in Lao PDR

Project Name	Description
<p>Nam Theun II</p>	<p>The Nam Theun II hydropower project was developed in the Nakai Plateau of Lao PDR and resettled over 6,000 people. The project was developed by the Nam Theun Power Company, supported by the World Bank and the Asian Development Bank. Given the strong influence of the World Bank in project development, the Concession Agreement and Resettlement Policy outlined some comprehensive social and gender interventions based upon findings from the gender assessment conducted during the project design phase. The gender assessment found that women faced “greater risks in the resettlement process” due to a lack of access to “education, off-farm employment, production markets, cash assets, and sociopolitical empowerment” (Porter & Shivakumar, 2010). At the very outset of the project, the agencies made sure to incorporate women in the project, and formed a resettlement committee, which had three women represented from the province and women from the LWU on the Resettlement Management Unit. These entities were responsible for directing and guiding the resettlement process (GiZ, n.d.).</p>
<p>Theun-Hinboun</p>	<p>The Theun-Hinboun Expansion project is operated by the Theun-Hinboun Power Company (THPC) with international financial backing. The expansion created an additional 230 MW of capacity and relocated 4,000 individuals. Driven mainly by the financial shareholders and corporate responsibility, the THPC has focused on gender equity throughout the project planning, implementation, and follow-up (Theun-Hinboun Power Corporation [THPC], 2011). This included conducting a pre-resettlement health survey with gender-disaggregated results and setting indicators that tracked health throughout the resettlement process. Similar to the Nam Theun II, the consultative process included separate meetings with women to ensure that the THPC understood their concerns. The LWU was considered a key ally in facilitating a gender-inclusive consultative process (Allen, 2018) (GiZ, n.d.a).</p>

6.3.2.2 Project Planning and Development

The following approaches have been used in hydropower projects in Lao PDR to provide opportunities for women to participate in consultation processes, build their capacity to participate, and ensure that resettlement approaches are gender sensitive.

¹⁴The Pak Beng Hydropower Project was proposed in January 2017. The project would be built within the Mekong River, in northern Lao PDR. If built, the dam is expected to generate over 4 GW of electricity annually (Mekong River Commission, 2017).

Public Participation: The planning stage for hydropower projects is a crucial time to seek input from those who will be impacted by infrastructure projects. The Government requires developers to conduct stakeholder consultative processes in line with the Ministerial Instruction on Environmental and Social Impact Assessment Process of the Investment Projects and Activities (Ministry of Natural Resources and Environment, Lao PDR, 2014). The guidelines require developers to include public participation during the planning phase of a hydropower project, including “different levels of local administration, the project-affected persons and other related stakeholders” (Ministry of Natural Resources and Environment, Lao PDR, 2014).

Capacity Building and Consultation for Local Governments: The creation of public participation processes does not guarantee that forums will be open and accessible to women. Some of the sustainable hydropower projects in Lao PDR have begun to address this challenge through capacity-building programs to foster the development of women’s leadership. Throughout the monitoring period of the Nam Theun II project, the power company and the World Bank enlisted the expertise of local nonprofits such as the Association for Development of Women and Legal Education and the LWU to provide capacity building for the village committees on understanding the differences between customary law and the protections for women under Lao law. This training also focused on differentiated impacts to women to increase the capacity of the village grievance committee after the formal resettlement period ends and the hydropower developer exits (Bouphasavanh, 2018) (Krahn, 2018).

Inclusion of Resettled Women: In addition to increasing the capacity of local committees, developers have also focused on communicating and building the capacity of women in resettlement villages. The Lao Government is collaborating with the Natural Heritage Institute on a Sustainable Hydropower Plan for the Xe Kong River Basin. The initiative has held several workshops and has a new focus on increasing the participation of women from all backgrounds in consultations (Natural Heritage Institute, 2017). Organizations, such as Oxfam, have trained organizations active in hydropower development and oversight on gender-sensitive communication and incorporating considerations of minority groups (Thiphawong, 2018).



Literacy classes for community members in Nakai (NTPC, n.d.)

6.3.2.3 Resettlement Interventions

Hydropower development often displaces communities through construction needs and reservoir development. This disruption often requires resettlement and compensation to affected households. The approach to resettlement and compensation within Lao PDR has evolved quickly in recent years, and projects have included several important elements to promote gender equity for impacted communities.

Compensation: As part of the resettlement process, communities are offered compensation, which can often take the form of land and/or cash. Analyses of hydropower projects indicate that women have more limited access to land titles and cash compensation from resettlement. In the case of a divorce or separation, this can leave women with few resources (Allen, 2018) (Gallagher & Nouansyvong, 2018) (Geheb & Sayatham, 2018). To address this trend, the Theun-Hinboun project compensated families through a bank account, which required signatures from both partners to access funds (Allen, 2018). In addition, in their resettlement agreement with the Nongxong village, the developer agreed to provide land for land, as opposed to cash compensation for land (THPC, 2011).

Gender Disaggregated Monitoring: To understand the gender impacts of resettlement, gender-disaggregated monitoring and data collection is required. This is an emerging practice within the Lao PDR hydropower industry and is not the default method of data collection. Ideally, this process should be initiated at the project's inception. In the Nam Theun II project, the developer created a GAP and a Resettlement Action Plan with gender indicators. The project commissioned surveys to resettled populations, which collect gender-disaggregated data at the village level to track progress against indicators (Hughes et al., 2013).

Health Interventions: Many of the rural villages impacted by hydropower development in Lao PDR had limited access to healthcare prior to resettlement due to their remote locations. The collection of gender-disaggregated data and metrics has helped some hydropower developers create targeted interventions for women's health. For example, the Theun-Hinboun project identified poor nutrition as an issue, and thus provided cooking classes at the local health centers in the resettlement villages. Since health indicators were incorporated at the project's inception, they were able to report on several key metrics after the first five years, including a 10-percent increase in households with food security from 2008 to 2012 (GiZ, n.d.).

6.3.3 CHALLENGES

While Lao PDR's hydropower sector has progressed, many challenges remain to increase gender equity throughout the hydropower sector.

Shortage of Trained Staff: The Theun-Hinboun and the Nam Theun II projects have often been cited as case studies for gender equity in hydropower in Lao PDR (Allen, 2018) (Geheb & Sayatham, 2018) (Krahn, 2018). However, experts noted that the lessons learned, interventions, and the multi-sector gender monitoring could be replicated in other hydropower projects (Krahn, 2018). Many developers do not have gender or social experts on staff, particularly smaller projects with fewer resources (Allen, 2018).

Limited Government Capacity: In several interviews, individuals pointed to a shortage of trained social scientists working in hydropower. Multiple stakeholders have referred to Lao's framework of laws as best in class, but there are capacity challenges at the national and local government agencies, which prevent implementation (Geheb & Sayatham, 2018) (Simpson & Simon, 2013). Developers, civil society members, and academics interviewed for this study indicated it would be worthwhile to consider establishing a pool of gender and hydropower experts at the national level, which could be made available to future hydropower projects (Allen, 2018) (Geheb & Sayatham, 2018) (Krahn, 2018).

Lifestyle and Livelihood: Some communities have not moved from swidden agriculture¹⁵ and subsistence practices to income-driven lifestyles. In many of Lao’s ethnic groups, women lead foraging activities and riverbank agriculture, and thus their livelihoods and income generation are impacted by resettlement that impacts their access to rivers and forests (Sayatham & Suhardiman, 2015) (Sensathith, 2018). Developers and the Government are becoming increasingly sensitive to these challenges (Sensathith, 2018).

Intersection of Gender and Ethnicity: The rich ethnic diversity of Lao PDR has led to some resettlement challenges, especially in cases when villages with different cultural practices are resettled together. Analysis of ethnic intersectionality is still rare within social impact assessments of hydro projects. Some developers have begun to use local trainers in capacity-building programs for women, who speak multiple languages and can better ensure that the needs of ethnic groups are accounted for (Kittikhoun, 2018) (Thippawong, 2018).



Community members in Nakai (NTPC, n.d.).

6.3.4 KEY TAKEAWAYS

The successful approaches in Lao PDR’s hydropower sector are replicable. Analogous regulatory and supporting structures can be found within other country contexts. Regulatory commissions often play a similar role as the Lao Ministries in project review and approval of large-scale generation projects, balancing consumer and investor interests, and long-term planning; requiring and regulating standards for energy infrastructure development; and instituting a claims process for grievances. Many other countries also share Lao PDR’s commitment to women’s equality and willingness to collaborate with in-country civil society organizations, power project developers, and international NGOs to improve the sector’s development. Countries can emulate Lao PDR’s best practices in policy and industry for other energy infrastructure projects.

6.4 SUMMARY OF INFRASTRUCTURE STRATEGIES

Energy regulatory agencies and organizations can use a range of strategies for gender-inclusive stakeholder engagement and infrastructure project development. These strategies are outlined in Table 12 below.

¹⁵Swidden agriculture, also known as shifting cultivation, refers to a technique of rotational farming in which land is cleared for cultivation (normally by fire) and then left to regenerate after a few years. Governments worldwide have long sought to eradicate swidden agriculture, which is often called “slash-and-burn” (Survival International, 2018).

Table 12: Framework for Regulators: Gender Equity in Energy Infrastructure Projects

Solution	Description	Challenges Addressed	Potential Value/Outcomes
<p>Transparent Consultation Processes and Inclusion of Women throughout the Project Planning and Development Process</p>	<p>Ensure that women can participate meaningfully in stakeholder processes:</p> <ul style="list-style-type: none"> • Set requirements for women’s representation in utility or developer stakeholder processes (this could include hosting women-only consultations) • Require reporting on women’s participation in stakeholder engagement processes • Provide clear guidelines on the stakeholder process needed; including where, when, and how different stakeholders concerned can have input in the process 	<ul style="list-style-type: none"> • Resource use • Resettlement and compensation • Socioeconomic constraints • Health and safety 	<ul style="list-style-type: none"> • Provides greater understanding of how women and men use impacted resources • Project developers can better understand women’s specific concerns and address and mitigate them during the project development and implementation process • More stakeholders are involved in the process • Clearer standards for regulators, developers, and utilities on the process • More informed interventions due to more stakeholder input
<p>Monitor and Evaluate Gender-Specific Impacts*</p>	<p>Require developers to develop a baseline and monitor and evaluate gender-disaggregated impacts of the project on communities</p>	<ul style="list-style-type: none"> • Resource use • Resettlement and compensation • Health and safety • Employment opportunities 	<ul style="list-style-type: none"> • Provides gender-disaggregated data and information to developers, utilities, and regulators • Information can improve interventions and ensure that impacts are equitable in their desired outcomes • Data collections supports measuring progress toward project goals
<p>Hire Women as Employees</p>	<p>Require or encourage the hiring of women as part of energy infrastructure development projects</p>	<ul style="list-style-type: none"> • Employment opportunities 	<ul style="list-style-type: none"> • Greater gender equity in employment opportunities and economic benefits from infrastructure projects

Solution	Description	Challenges Addressed	Potential Value/Outcomes
Create Opportunities for Women in Procurement Requirements	Create procurement processes to ensure that women-owned or gender-certified businesses can be involved in the energy value chain of an infrastructure project (e.g., as vendors, suppliers, developers, or subcontractors)	<ul style="list-style-type: none"> • Employment opportunities 	<ul style="list-style-type: none"> • Greater gender equity in employment opportunities and economic benefits from infrastructure projects
Health and Safety Programs*	For impacted communities, provide or require health and safety services as part of project resettlement (These can include improved access to clean water and electricity; installing street lights; developing or improving health clinics; developing clean water and sanitation; and supporting sex trafficking prevention programs, sexually transmitted infections prevention, and family planning.)	<ul style="list-style-type: none"> • Resettlement and compensation • Health and safety • Resource use 	<ul style="list-style-type: none"> • Can reduce women’s time poverty from foraging for food, biofuels, and water • Can improve health outcomes for impacted communities, especially women and children
Joint Land Titles and Compensation*	Require developers to issue joint land titles and compensation to both women and men with a claim to land ownership	<ul style="list-style-type: none"> • Resettlement and compensation • Resource use 	<ul style="list-style-type: none"> • Provides women ownership over property and access to fair compensation

*The health and safety programs and joint land titles and compensation strategies are further discussed in the Lao PDR case study.

Box 13: Further Reading: Infrastructure

- Asian Development Bank's (2012) *Gender Tool Kit: Energy Going Beyond the Meter* outlines approaches to address gender issues at each phase of a project cycle to move toward more gender-responsive energy infrastructure and services.
- ESMAP's (2013) *Integrating Gender Considerations into Energy Operations* provides a framework for assessing gender issues, risks, constraints, and opportunities associated with energy projects; and provides an assessment framework for infrastructure projects related to household energy, small-scale power generation, access to electricity, renewable energy, energy efficiency, large-scale energy generation and distribution, and energy policy.
- USAID's (2014) *Women at the Forefront of the Clean Energy Future* provides recommended initial steps for addressing challenges women face across the energy value chain, focusing mainly on large-scale renewable energy projects.
- ENERGIA's (2011) *Mainstreaming Gender in Energy Projects: A Practical Handbook* introduces considerations for implementing energy projects in developing countries and suggested processes for developing a GAP for each project. The handbook includes a module specifically aimed at conducting an organizational assessment to mainstream gender. The assessment is meant to evaluate the development organization's capacity to implement and monitor gender considerations within a specific project. The assessment analyzes both project-specific data, but also looks at internal organizational policies to see if they are gender sensitive and whether there is a gender balance of staff (Cecelski & Dutta, 2011).

SECTION 7 CONCLUSION

While recognizing that each energy regulatory commission will begin from a different starting point, this guide is intended to provide a range of strategies informed by expert input and implementation on the ground for advancing gender equity in energy regulation. Achieving gender equality in the energy sector requires many steps by a variety of stakeholders. Energy regulators can be important agents of change within the energy sector in many countries. Regulators serve a crucial function, independently overseeing the technical and economic performance of the electricity sector, and protecting and balancing the interests of all consumers and the private sector. Given this unique role, regulators can adopt strategies to more adequately address the needs and integrate the perspectives of women as employees, decision-makers, energy users, and impacted stakeholders. The following table summarizes the key strategies outlined within this guide, highlighting those that were included in the case studies.

Table 13: Strategies for Gender Equity

Topic Area	Levers for the Regulator	Strategies for Gender Equity	Potential Value
Employment	<ul style="list-style-type: none"> Human resource policies Partnerships Procurement policies 	Workplace Protections	<ul style="list-style-type: none"> Equal opportunities for job placement and promotions Safer workplace environment, leading to greater productivity and employee retention
		Enhanced Benefits*	<ul style="list-style-type: none"> Attract more female talent to the energy sector Improved retention for current employees
		Continuing Education and Training for Women Employees*	<ul style="list-style-type: none"> More highly trained workforce Support for women advancing to leadership positions
		Gender Awareness Training and Resources for Employees*	<ul style="list-style-type: none"> More knowledgeable staff and allies Safer workplace for women Cultural shift to tackle implicit biases
		Hiring Quotas and Recruitment Targets	<ul style="list-style-type: none"> Increased hiring opportunities for women Increased representation of qualified women within commissions

Topic Area	Levers for the Regulator	Strategies for Gender Equity	Potential Value
Energy Regulatory Policy	<ul style="list-style-type: none"> Tariff-setting Data collection and reliability Stakeholder engagement and mediation Licensing requirements Monitoring and evaluation requirements 	Income-Based Electricity Tariffs and Incentives	<ul style="list-style-type: none"> Reduce negative health effects by providing electricity access Reduce drudgery so women have more time to access additional livelihoods or education
		Link the Energy Sector to National Gender Policies	<ul style="list-style-type: none"> Harmonizes national policy and regulatory frameworks Makes meeting energy sector objectives a goal for stakeholders outside the energy sector Makes gender equity a goal for stakeholders within the energy sector
		Collect Gender-Disaggregated Data	<ul style="list-style-type: none"> Allows for the design of policies and regulatory frameworks that address gender disparities
Energy Infrastructure	<ul style="list-style-type: none"> Stakeholder engagement and mediation Licensing requirements Procurement processes Monitoring and evaluation requirements 	Transparent Consultation Processes and Inclusion of Women throughout the Project Planning and Development Process	<ul style="list-style-type: none"> Provides greater understanding of how women and men use impacted resources Project developers can better understand women's specific concerns and address and mitigate them during the project development and implementation process More stakeholders are involved in the process Clearer standards for regulators, developers, and utilities on the process More informed interventions due to more stakeholder input
		Monitor and Evaluate Gender-Specific Impacts	<ul style="list-style-type: none"> Provides gender-disaggregated data and information to developers, utilities, and regulators Information can improve interventions and ensure that impacts are equitable in having desired outcomes Data collections supports measuring progress toward project goals
		Hire Women as Employees	<ul style="list-style-type: none"> Greater gender equity in employment opportunities and economic benefits from infrastructure projects

Topic Area	Levers for the Regulator	Strategies for Gender Equity	Potential Value
Energy Infrastructure		Create Opportunities for Women in Procurement Requirements	<ul style="list-style-type: none"> • Greater gender equity in employment opportunities and economic benefits from infrastructure projects
		Health and Safety Programs*	<ul style="list-style-type: none"> • Can reduce women's time poverty from foraging for food, biofuels, and water • Can improve health outcomes for impacted communities, especially women and children
		Joint Land Titles and Compensation*	<ul style="list-style-type: none"> • Provides women ownership over property and access to fair compensation

*Strategy highlighted in chapter case study.

SECTION 8 APPENDICES

8.1 APPENDIX: METHODOLOGY

This guide was informed by a qualitative literature review, interviews with experts in the field of energy regulation internationally, and primary research developed from two in-country case studies and remote primary research for country spotlights and snapshots. The methodology for each of these components is outlined below.

8.1.1 LITERATURE REVIEW

The guide was informed by desk research yielding a review of secondary resources that met some or all the following criteria:

- Includes gender in its analysis or tools;
- Identifies any gender-specific barriers or benefits related to policy, employment, or infrastructure projects;
- Identifies case examples or studies of women's participation within the energy sector or analogous sectors within developing countries; and/or
- Developed by an international development agency or program, or another reputable source.

The most cited sources among those identified as relevant originated from international development agencies and NGOs. The intended audience for these documents includes energy and governmental agencies, developers of infrastructure projects, and/or government officials.

8.1.2 EXPERT ADVISOR REVIEWERS

The Expert Review and Advisory Committee contributed key content expertise throughout the development of the Practical Guide to Women in Energy Regulation. These experts in energy regulatory policy and gender participated in one-on-one phone interviews at the outset of the guide research, and reviewed a partial and full draft of the guide. The advisory committee is composed of:

- Güleşan Demirbaş, Head of Strategy and Development, Energy Market Regulatory Authority, Turkey
- Beatriz Estrada Moreno, Director of International Affairs, Comisión Reguladora de Energía, México
- Chamath Goonewardena, Director of Regulatory Affairs Division, Public Utilities Commission of Sri Lanka, Sri Lanka
- Lija Makare, Head of International Relations, Public Utilities Commission, Latvia
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- Nozipho Wright, Gender and Energy Consultant, Botswana

8.1.3 CASE STUDY METHODOLOGIES

Accompanying the chapters of the guide are two in-depth case studies focused on gender equity in the energy sector in Lao PDR and Costa Rica. These case studies were conducted in two stages:

- 1) Literature Review: Each case study merited its own literature review to best understand actions that had been taken to date within the energy sectors in both countries. For Costa Rica, the literature review focused on identifying key entities involved in supporting the education, hiring, and advancement of women within the energy sector; key actions taken to date by national governmental organizations and other key stakeholder organizations to promote women in the energy sector; and any barriers that may be unique to the Costa Rican context. Similarly, in Lao PDR, the focus of this literature review was to identify key entities in hydropower development within the country, ways in which developers and energy sector entities were addressing women's issues in energy infrastructure development, and any barriers that were specific to Lao PDR for women in infrastructure development.
- 2) In-Country Field Visits: For both Costa Rica and Lao PDR, the team conducted week-long in-country field visits. Through these visits, the teams set up interviews with key stakeholders identified in the desk research (interviewees are acknowledged in the Acknowledgements section of the guide). The goals of the in-country interviews were to (a) ground-truth the actions identified in the research, including what had been implemented and key outcomes; (b) identify any key challenges for women in the energy sector related to either employment or infrastructure; and (c) identify the replicability and feasibility of undertaking these actions within additional countries' contexts.

The case studies found throughout the guide are results of the desk research and in-country research, and are based on quantitative and qualitative information provided through the case study development process. Additionally, the three country spotlights on regulatory policy in Cabo Verde, Ghana, and Tanzania were developed based upon desk research followed by phone interviews with policy or project implementers.

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