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Research Article

Strategic Management Measures to Increase the Representation of Women in Renewable Energy Business

Maia Melikidze[1]*, Tamar Chkhaidze[2] and Garik Teymurazyan[3]

[1]*Associate professor, Founder of RES LAB (Renewable Energy Sources Laboratory), Business and Technology University, Georgia*

[2]*Researcher, RES LAB, Business and Technology University, Georgia*

[3]*Research and Development Manager, Georgian Renewable Energy Development Association (GREDA), Georgia*

***Corresponding author:** Maia Melikidze, Associate professor, Founder of RES LAB (Renewable Energy Sources Laboratory), Business and Technology University, Georgia

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Abstract

This paper aims to investigate strategic management measures aimed at increasing women's representation in businesses in renewable energy. The research aims to identify the main hindering factors for sector development, as well as effective measures to raise awareness and involvement of women and other stakeholders. The research methodology sub-chapter describes the research, research instruments. This chapter analyzes research results, reflecting the opinions of interviewed respondents. The study primarily employs qualitative research methods and is divided into three stages. The first stage involves analyzing secondary sources, encompassing international and Georgian references. The second stage includes gathering relevant information from the State Statistics Service of Georgia. The third stage comprises in-depth interviews with expert women working in renewable energies.

The conclusion summarizes the issues raised and analyzes research results regarding effective measures to increase employment and involvement of women in renewable energy businesses from a strategic management perspective, emphasizing the potential for women's participation. The study reveals a significant employment market in the country within renewable energies, projected to expand further with increased utilization of the country's renewable energy potential. However, the research also highlights challenges such as an inadequate educational system, low awareness levels, lack of scientific and statistical studies, and absence of appropriate legal norms to facilitate balanced gender involvement in the energy sector.

Keyword: Renewable energy; Women's representation; Strategic management; Energy business; Women in energy

Introduction

Renewable energy is a resource, which is obtained from naturally renewable resources, which don't deplete overtime making it different from fossil fuels. The main sources shall be considered: solar, energy, wind energy, hydroelectric energy, geothermal energy, etc. Given the critical importance of renewable energies in addressing global challenges similar to climate change, energy security, and sustainable development, interest in these energy sources is rapidly increasing worldwide. Additionally, the job market for the renewable energy sector is growing exponentially. Whatsoever, despite the high demand participation of women both globally and in Georgia remains low. A study conducted in 2018 by the International Renewable Energy Agency found that women make up 32% of the workforce in the renewable energy sector.

Despite that, most of these women hold administrative positions. In the case of Georgia, in accordance with the National Statistics Service, women account for 22 % of the total employees in the sector, mostly women occupy administrative roles, which is similar to the international example (Figure 1).

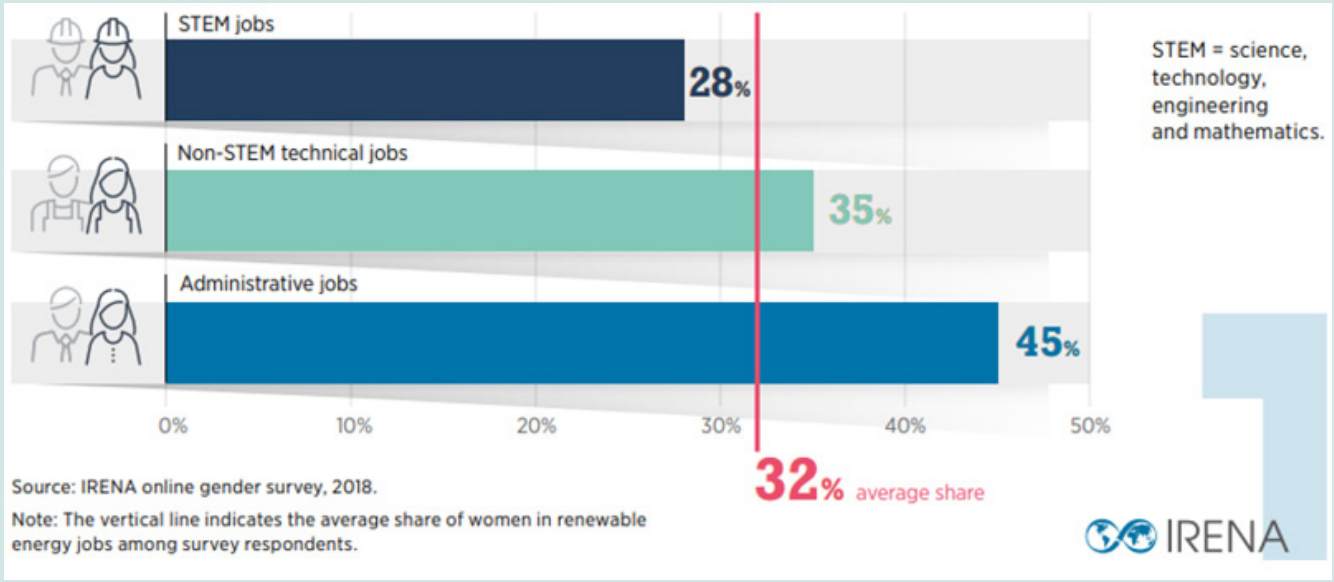

Figure 1: Distribution of the proportional share of women employed in renewable energies in the total employment market, 2018.

Source: IRENA, (International Renewable Energy Agency) "Renewable Energy: A Gender Perspective 2019 [1]

The purpose of the study is to examine the local and global issues that are faced by the business sector in the renewable energy industry concerning women's involvement. To continue, it aims to explore effective strategic management measures that can be implemented for the enhancement of women's participation in businesses.

Results and Analysis

Renewable energy: the key to a secure future

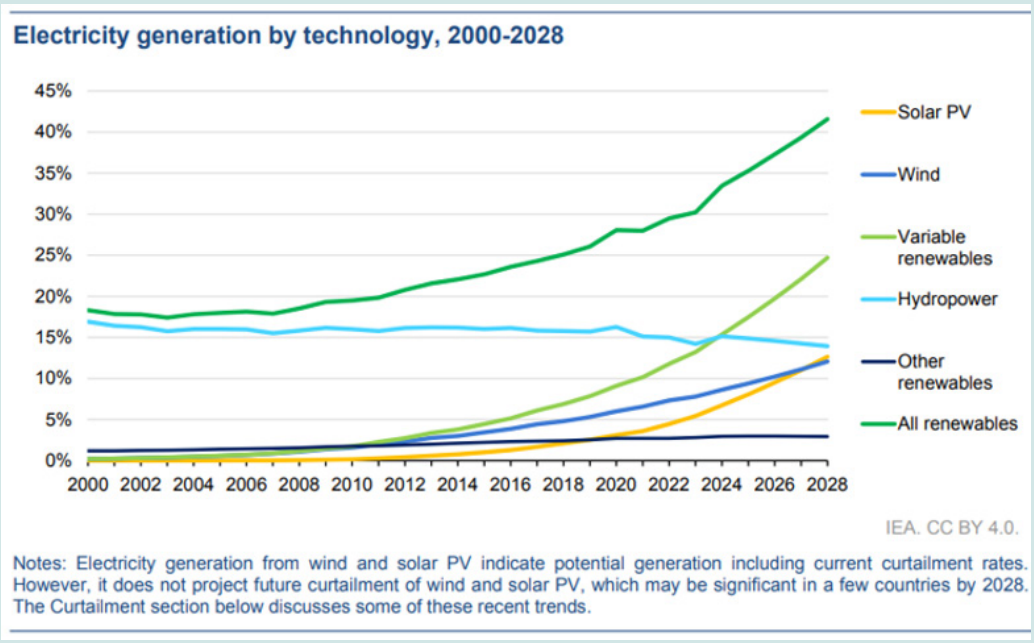

Figure 2: Global electricity generation by technology, 2000–2028.

The energy sector is vital in solving climate change challenges, on the other hand, it also holds the solutions necessary for overcoming them. 196 countries including Georgia in 2015 singed the Paris agreement with the aim of nearly halving greenhouse gas emissions by 2030 and achieving net zero emissions by 2050. This global commitment to renewable energy is vital for facing climate change challenges while ensuring a sustainable future and development (Figure 2).

Source: IEA (International Energy Agency) "Renewables 2023 Analysis and forecast 2028, 2024 [2].

Renewable energy has a critical role in achieving Paris Agreement goals. To meet these targets, countries shall transition away from fossil fuels and attract investment heavily in alternative renewable energy sources. After signing the agreement each participating country has made significant strides in advancing the renewable energy sector, as mentioned by the International Energy Agency's (IEA) 2023 report. By 2023, renewable energies will account for 30 % of the total global energy output, which highlights that there has been 5% increase since 2018. The international energy agency (IEA) says that this share will be risen to 42 % by 2028, including the wind and solar energies which contribute around 25. regardless of the efforts of numerous countries, China remains the primary cause of the growth of renewable energy (IEA RENEWABLES 2023).

Renewable Energy in Georgia

In accordance with Georgia's energy policy, which was adopted by the Ministry of Economy in October 2023 [3], renewable energies have been a central focus of the country's economic strategy. This policy adoption preceded with approval of the first long-term low-emission development strategy 2050 on April 24, 2023, which has a vital role in updating the national climate plan. In 2023 Georgia's electrical system achieved a significant milestone, with the country's power plants generating a record 14,396 million kilowatt-hours. Increase in the annual production has been driven by a 1 % rise in energy generation from a hydroelectric power plant and a 2 % increase from thermal power plants. However, it is important to highlight that the year ended with a 2 % reduction in the annual output from wind power plants.

The International Finance Corporation (IFC) and the World Bank at the end of 2023 have released a report on creating new markets in Georgia. The report underlines the most attractive investment environments for the private sector and highlights the needs of the country to fully realize its potential (IFC, WORLD BANK 2023) [4]. According to the report, along with developing transport and logistics infrastructure and supporting digital businesses, Georgia and the private sector shall prioritize renewable energies to harness the country's vital potential in the area. Georgia has been estimated to have 18 gigawatts of renewable energy potential, however, currently less than 20 % of the total potential is utilized. To take advantage of such an opportunity, the IFC suggests the following: Georgia needs to implement clear policies, establish a system of regulations and permits, and adopt more sustainable incentive approaches.

Women's Role in Renewable Energy

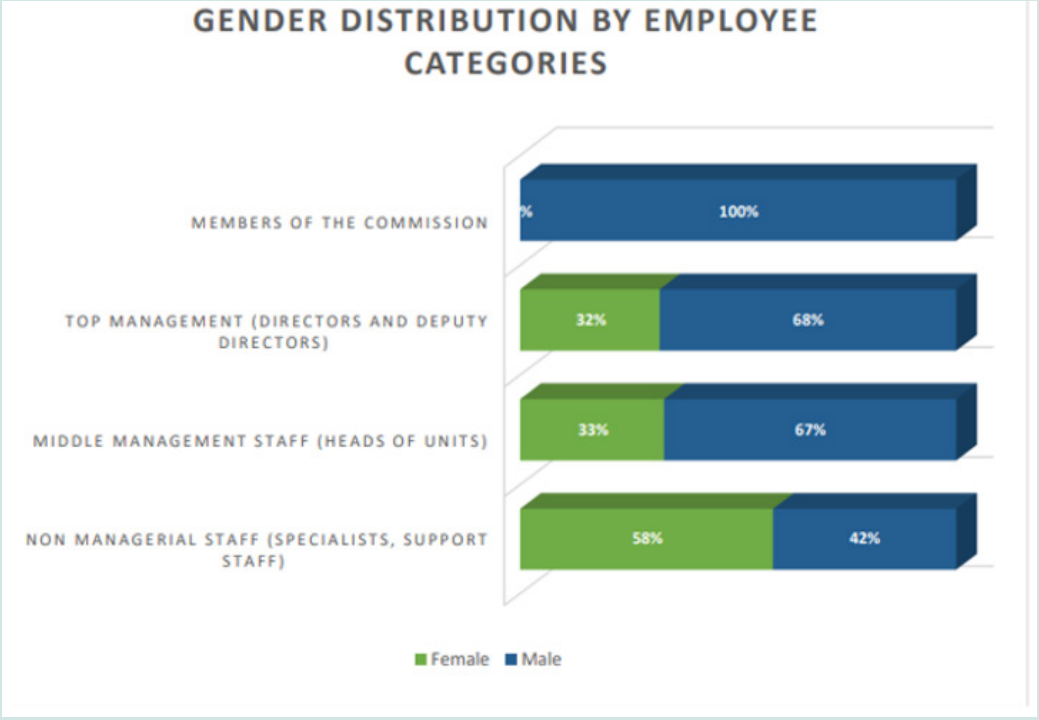

Figure 3: Distribution of commission members and staff according to gender.

Gender equality is a fundamental human right. Each woman has a right to live with dignity, free from poverty and fear. Empowerment of women is vital for the achievement of sustainable development and eradicating poverty. Gender equality, in Georgia, is guaranteed by the constitution, ensuring that both men and women have equal rights for employment in any field and equal access to benefits. Georgia is actively advancing in gender equality, and women's economic empowerment (WEE), which are vital for Georgia's investment in climate and national policies. For alignment with EU incentives, Georgia has enacted several legislative changes. However, no specific legislative measures have been introduced to increase women's participation in the energy sector, specifically in the renewable energy sector.

Despite the above-mentioned, and the lack of direct legislative measures, the government is still indirectly promoting gender policy through the governmental services involved in the energy sector. This effort is highlighted in the 2023 activity report on the National Energy and Water supply regulatory commission of Georgia. The report highlights that the commission ensures equal individual rights and freedom for men and women by upholding gender equality in both employment and professional development. For the illustration of this commitment, the report includes a diagram showing the gender distribution of commission members and staff (GNERC, 2023) [5](Figure 3).

Source: GNERC 2023

In Georgia, as in numerous parts of the world, the energy sector and women are complex and often contradictory. The current energy policy in the country largely overlooks gender aspects. Gender–rated impacts of energy policies and projects are usually examined only in the context of large infrastructure initiatives that may necessitate forced resettlement despite that event then only if these projects are financed by the international financial institutions. On the other hand, the gender imbalances such as limited participation for women in decision-making processes, employment opportunities health impacts, and benefits are rarely seen as problematic, regardless of the significance of the impact. Results in energy policy and investment projects which often are designed without consideration of the gender-specific impacts or planning actions for mitigation of the following effects: healthcare, employment, workload and poverty alleviation/ the gender prism of the energy sector in Georgia remains largely neglected by both society and decision makers (Green Alternative 2017) [6].

The Gender Assessment Document of Georgia, published by USAID in 2010, outlines all the areas in which more governmental incentives are needed to boost women's involvement. The evaluation also notes that the implementation of current energy-related projects could have a significant effect on the populace because, historically, the establishment of hydroelectric power plants and other infrastructure in the areas has frequently had a detrimental effect on women. Men had an entirely different experience; similar programs generated more jobs for them; thus, because of the unequal distribution of revenue, similar projects became more barriers for women (USAID, Gender Access, 2010) [7].

Research Methodology and Interpretation

Due to the complexity of the given issue and the lack of substantial practices addressing this matter both globally and in Georgia, public awareness of the energy sector remains low. Particularly in this paper, a monthly study was chosen to explore the topic in depth. The research is explanatory and is structured into three main stages. Three main stages will be developed below. In the first stage of the study, secondary sources were analyzed, drawing from both Georgian and international experiences. This has provided a foundational understanding of the current state of gender-related practices in the energy sector [8-12].

In the second stage, statistical data was requested from the National Statistical Service of Georgia. To be precise, the research data of the business sector, which was related to the activities defined by the D section of the National Classifier of Georgia, types of economic activity (NACE), namely the supply of electric energy, gas, steam and air-conditioned and all of this under code 35. As for stage 3 of the research, in-depth interviews were selected as the primary research method. This approach will facilitate a detailed and nuanced analysis of how businesses in the renewable energy sector specifically in Georgia perceive women's involvement in before mentioned sphere. The interview's goal was to uncover insights into how businesses envision increasing female participation, identifying barriers to the sector's advancement and explore more strategic measures that would address the before mentioned challenges.

During the research process, representatives from the three primary sectors of renewable energy- hydro, wind and solar powers were the ones upon which the interviews were conducted. The deliberate and precise approach aimed to ensure that the results are as comprehensible as possible, that would provide a detailed overview of the current state of the renewable energy sector. The aim of the beforementioned interviews was to identify the main challenges faced by the sector, moreover, to outline strategic measures that would foster further development into the strategies that haven been proven to be successful in the expanding opportunities for women in renewable energy sector. The data analysis shall commence with a careful examination of the National Statistics Service of Georgia, which underlines the sector's rapid growth, driven by increased revenues. Despite this growth, there is a noted gender imbalance in women's participation within the sector. However, it appears to be a discrepancy between this statistical data and the information obtained from the interviews. In accordance with the respondents, women's salaries are often lower than those of men, suggesting that gender disparities in compensation are not adequately reflected in the beforementioned data[13-15].

From the prism of representatives from both the non-governmental and private sectors, the government reforms are deemed effective; whatsoever, there is an important absence of time bound legislative regulations specifically designed to promote women's representation in the sector. Business representatives also highlight that the unpredictable political and economic climate along with important investment projects based on a superficial understanding of renewable energy sector, affects the delays. The delays in return slow down the creation of additional jobs and the inclusion of women in the sector.

The beforementioned interviews reveal a conclusion among the respondents in regard to several critical issues: the education system within the sector is considered inadequate, there is a low level of awareness about renewable energy and there is a lack of scientific and statistical studies to support development and gender inclusion.

It is anticipated that the government energy policies, which play an important role and place the energy sector as a priority for the country's economy and energy independence, will lead to the establishment of additional legal policies and effective measures. The measures should work as a promotion of the involvement and employment of both women and other interested parties in the sector. The research highlights that there's a substantial employment market within the renewable energy sector in Georgia in which women would play a vital role as the country is just beginning capitalization of its energy market. However, the current state of the educational system and programs does not align with the needs of the evolving employment market, which limits the growth of women's participation in the sector. Moreover, while private companies and non-governmental organizations demonstrate commitment, their efforts have not yet achieved high levels of efficiency [15-19].

Conclusion

The rapid growth of renewable energy has introduced both challenges and opportunities for the global and local energy markets. Traditional energy sources have been involved significantly over the years leveraging technological innovations to address the challenges caused by climate change. Numerous countries have prioritized the advancement of renewable energy as a result bringing positive impacts on the sector's production as evidenced by the example of China. On the other hand, the renewable energy sector also presents new challenges, with gender inequality among employees, which is one of the biggest concerns. Despite the efforts by non-governmental organizations and associations to raise awareness and engage women with programs, conferences and employment opportunities gender inequality persists.

While the traditional energy sector has long been a foundation of the economy and business, the growing market of renewable energy sources and their increasing effectiveness are making green energy more and more attractive field for both female and male job seekers. In accordance with the national statistical service of Georgia, the average salary of women in the energy sector is slightly higher than of men. However, the study reveals that the renewable energy sector faces significant challenges. One of the most important issues is the lack of compatible regulatory frameworks and inadequate educational opportunities. Despite their determination, individuals interested often lack the high-level education for leading positions.

To conclude, the rapid development of energy systems has introduced both challenges and opportunities for the global and local energy sectors. Green energy transition and decarbonization represent transformative changes in the economic landscape, offering benefits such as stable and well-compensated jobs. Nevertheless, challenges such as regulatory compliance, legal framework and educational standards create a significant obstacle to the broader adoption of renewable energy sources and the increased involvement of women in the sector. The research indicates that businesses and NGO's involvement in the energy sector has the potential to increase engagement, improve efficacy and promote bigger integration of women in the field. Addressing these challenges in Georgia's energy sector can adapt to the evolving energy landscape. The adaptation could lead to innovative solutions that would increase interest both from women and men, ultimately fostering a more dynamic sector.

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