



GENDER BALANCE IN THE RENEWABLE ENERGY SECTOR IN KAZAKHSTAN:

**CURRENT STATUS, CHALLENGES
AND SOLUTIONS**



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TERMS AND ABBREVIATIONS

RES	Renewable energy sources
GW	Gigawatt
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
ILO	International Labor Organization
UNDP	The United Nations Development Programme
STEM	Science, technology, engineering, and mathematics
FS	Feasibility study



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RESEARCH SUMMARY





This report is prepared within the framework of the UNDP/GEF Project 00101058 "Derisking Renewable Energy Investment in Kazakhstan" (DREI). As part of this project, an analysis of gender balance in the renewable energy sector in Kazakhstan is envisaged.

The report thoroughly examines the gender balance within the renewable energy sector in Kazakhstan. It encompasses the current status, challenges, and solutions for enhancing gender balance in this sphere. The report consists of two parts: (1) an Overview of gender balance status and recommendations for the energy industry in the Republic of Kazakhstan; and (2) an Analysis of legislation and regulatory acts in the field of gender equality.

The research shows that in general, women express more concern about climate change and decarbonization than men. However, the green energy sector employs a higher number of men.

The share of the workforce required to produce 1 GW of energy from renewable energy sources is higher than that from traditional energy sources such as oil, gas, and coal. This indicates the attractiveness and great opportunities for women's employment in the field of renewable energy field.

In 2019, women comprised 40 % of the total workforce in the solar energy sector worldwide and only 21 % in the wind energy sector worldwide. However, the majority (65 %) of surveyed women noted the presence of substantial gender barriers within this industry (IRENA, 2019).

By 2021, the proportion of the female workforce in the energy sectors of Kazakhstan remained considerably lower than that of the male workforce. Specifically, the average representation of women in the coal industry was 22 %, while in the oil and gas sector, it was 18 %. In contrast, the proportion of women employed in the renewable energy sector reached 30 %, showcasing a positive indicator of the comparative attractiveness of the renewable energy sector for women compared to the traditional energy sectors.

Nevertheless, a substantial disparity between men and women persists across all high- and mid-skilled professions in Kazakhstan. Female participation among energy sector leaders and within the overall workforce decreased from 2010 to 2020.



The most concerning trend is the fact that in Kazakhstan, women in coal mining, and oil extraction sectors, as well as in the renewable energy field, are concentrated in low-skilled and non-specialized professions. Particularly, in these sectors, the percentage of the female workforce surpasses that of the male workforce (see Table 3).

It is crucial to continue the established practice of forming women's network organizations within major energy companies, fostering the professional growth of female employees. Thanks to this practice, Kazakhstan leads in the Central Asian region in terms of the pace of implementing gender-inclusive solutions in the energy sector.

Corporations, governmental, and international institutions should engage in more active collaboration and knowledge exchange with each other. While individual energy companies and state organizations should develop their own policies and strategies for ensuring gender equality, their greatest success can be achieved through cooperation.

Women must become more actively engaged in decision-making processes that impact their lives, providing them with a more influential role in expressing their interests and more active economic participation in particularly significant investment directions related to infrastructure and energy development.

At the end of each of the two chapters of the study, detailed and specific recommendations are provided concerning the necessary changes and the implementation of practices that will facilitate the attraction and retention of the female workforce in the RES sector.



LIST OF RECOMMENDATIONS TO ADDRESS THE CHALLENGES



RECOMMENDATIONS IN THE FIELD OF EDUCATION

**1**

Provision of specialized scholarships to enhance women's access to technical careers with professional opportunities in the RES sector (STEM professions).

Establishment and support of dedicated mentoring groups in higher schools and universities to assist female students in smoother adaptation.

2**3**

Facilitation of alliances with technical schools and universities to support business internship programs for female students.

Development of strategies to attract women to vocational training institutes and universities offering programs in RES utilization.

4**5**

Encouragement of schoolgirls to undergo technical education courses related to energy/RES, as well as assistance in the subsequent employment within this field.

RECOMMENDATIONS FOR IMPROVING GENDER BALANCE IN THE RES SECTOR

To ensure gender equality during the transition to a sustainable energy model, recommendations should be developed for three main categories of female workforce:



1

1.1. Mid-skilled and high-skilled professionals in the renewable energy sector in Kazakhstan.

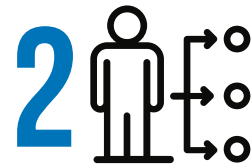
There is an inadequate representation of women compared to men working in the RES sector. The proportion of women receiving engineering and technical education is higher, while the proportion of women transitioning

from engineering education to work in the RES field remains low. It generally reflects the early stages of market development and factors such as unattractive working conditions, stereotypes, and a lack of incentives and opportunities for professional growth in the RES sector. International organizations could assist in overcoming these barriers.

1.2. Decision-makers in the energy sector. Limited representation of women exists in the bodies that define energy policies and make decisions in Kazakhstan. There is a significant gender gap in the proportion of women holding positions that influence energy policy both in the corporate sector and in the state energy sector.

1.3. Energy consumers. It is also important to study issues related to gender differences in the development of energy demand and consumption. Analysis of scientific literature and reports revealed a complete absence of research on this issue in Kazakhstan. Therefore, gaps remain in understanding gender differences at the household level in electricity consumption and demand generation.

This report has identified the absence of disaggregated gender-specific employment data in the RES sector, which poses a problem, for two reasons. Firstly, it hinders the monitoring of progress toward achieving gender equality and evaluating initiatives aimed at achieving gender equality.



Secondly, the lack of data conceals the insufficient representation of women in wind, solar, and hydro energy fields. International organizations, particularly UNDP, could prioritize the collection of disaggregated data to better identify employment issues within the RES sector. It is also necessary to conduct research and data collection at the household level.

Based on successful international practices, it is necessary to provide specialized scholarships to broaden women's access to technical careers with professional opportunities in the RES sector.



4

It is equally important to facilitate the establishment of alliances with technical schools and universities to support business internship programs for female students.

Develop strategies to attract women to vocational training institutes and universities offering programs in RES utilization.

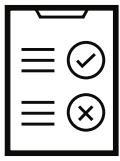


6

Support the retention of talented women in the workforce by implementing work arrangements that facilitate a work-life balance.

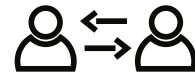
Fostering networking among female professionals in the RES sector is an essential tool for creating interest groups that can promote their professional activities in this field.



**8**

Verify the minimum safety/work conditions and gender aspects that companies must adhere to when obtaining project credits.

Support women within companies and create working conditions that facilitate a work-life balance.

9

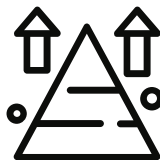
RECOMMENDATIONS IN THE LEGAL SPHERE

**1**

It is necessary to enhance the potential of state institutions in conducting gender balance assessments through the implementation of national programs and projects. This should involve improving the skills and resources of

government personnel in applying gender principles when developing, implementing, and evaluating state policy measures from a gender perspective, both at the national and local levels. It is also necessary to evaluate the incorporation of gender principles by studying examples of best practices and successful projects. Conditions should be created for widespread dissemination of the results of such practices and projects.

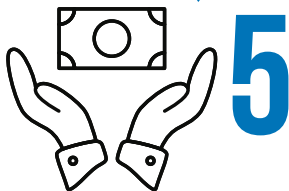
The state institutions (specifically, the National Commission on Women's Affairs, Family and Demographic Policy under the President of the Republic of Kazakhstan) should be empowered to conduct training programs and information campaigns for all government bodies responsible for gender development.

2**3**

Strengthening state policy, mainstreaming gender, and introducing of a gender-responsive state budget by expanding the coverage and depth of gender-disaggregated statistics, including by sectors.

This involves enhancing the coherence of activities among state institutions in data collection and processing, as well as improving access to gender-disaggregated data.

Energy projects, including those in the renewable energy sector, have sufficient potential for enhancing gender balance. Feasibility studies for each energy project should include gender assessments and female specialists must be engaged in discussions during the planning and implementation stages. Successful "local content" policies in the energy sector can be applied, wherein foreign companies commit to incorporating local content elements in their projects (e.g., 30 % local workforce, materials, suppliers, etc.). Drawing from this experience, it could be made mandatory to include a certain proportion of female employees (30 % to 50 %) in staffing for new projects in the RES sector.



At the legislative level, promote the "equal pay for equal work" principle following the example of Norway and Sweden. Regular pay mapping within companies should also be conducted, along with the development of a detailed action plan to advance gender equality.

Eliminate barriers and stereotypes for integrating gender balance in "traditional" sectors of public life and the economy, such as the energy sector, through various training programs funded by state subsidies and private investments. Incorporate gender-inclusive green economy principles into school and university curricula.





RESEARCH CONCEPT





This report is prepared within the framework of the UNDP/GEF Project № 00101058 “Derisking Renewable Energy Investment in Kazakhstan” (DREI). The long-term objective of the DREI project is to facilitate private sector investments in renewable energy sources (RES) in Kazakhstan,

aiming to achieve the country's renewable energy targets for 2030 and 2050. The DREI project encompasses both large-scale and small-scale renewable energy generation. The outcome of the project should be the transformation of Kazakhstan's energy market by increasing the utilization of renewable energy sources in the electricity sector from 1.1 % to 10 % by 2030, representing an approximately tenfold increase in RES production. To attain these goals, the project encompasses activities supporting renewable energy projects, intending to reduce emissions by at least 460,000 tons of CO₂. Furthermore, the project aims to introduce 9.5 MW of capacity for small-scale renewable energy generation, which is expected to produce around 500 GWh of energy.

Besides, the project incorporates an analysis of gender balance within the RES sector in Kazakhstan. Achieving gender balance is a critical factor for the sustainable socio-economic development of alternative energy. In this regard, this report thoroughly examines the gender balance within the renewable energy sector in Kazakhstan. It encompasses the current status, challenges, as well as solutions for enhancing gender balance within the realm of RES. The report consists of two main parts: (1) an Overview of gender balance status and recommendations for the energy industry in the Republic of Kazakhstan; and (2) an Analysis of legislation and regulatory acts in the field of gender equality.

The first section delves into the matters of gender balance within energy companies and other sectoral organizations in Kazakhstan's RES sector for 2019-2021. This part also encompasses an investigation into the situation, developments, and recommendations for the implementation of mechanisms to support gender equality, with a forecast of potential job creation for women in the energy sector, specifically within the RES sector.

The first part also discusses an analysis of pertinent issues within the energy industry that influence the enhancement of gender equality and opportunities for empowerment of girls and women in Kazakhstan. Additionally, it assesses risks affecting vulnerable population groups, such as rural populations, migrants, and people with disabilities, touching upon social, economic, and domestic aspects. The analysis is grounded in a review of scientific literature.



Further, the author examines foreign energy companies' corporate practices on gender equality, evaluating the applicability of various policies and practices within Kazakhstani companies. An analysis draws on international experiences, and recommendations are formulated for the implementation of Sustainable Development Goals (SDGs) and Environmental, Social, and Governance (ESG) objectives within companies, with a specific focus on gender equality indicators. In the penultimate section of the first part, the author analyzes the advantages of developing the RES sector in remote settlements of the Republic of Kazakhstan as a means of supporting women in domestic matters, particularly in contexts lacking or limited in central heating and energy supply.

This analysis encompasses social, economic, as well as domestic aspects. The concluding section provides practical recommendations for large and medium-sized companies to enhance the career potential of women within the energy sector companies. The second part of the report is dedicated to the analysis of legislation and regulatory acts in the Republic of Kazakhstan. It also includes a review of global experiences in developing legislation to enhance gender balance within the energy sector, including RES. First, the author analyzes the legislation and subsidiary regulations of the Republic of Kazakhstan to ascertain their facilitation of women's access to work and the realization of their potential within the energy market, including the RES sector. This analysis takes into consideration typical life situations and constraints that women encounter in their daily lives.

Then, the author defines barriers and provides recommendations for amending regulatory documents to enhance gender balance in the energy sector, including the RES sector. Subsequently, an analysis of legislative frameworks in other countries is conducted, assessing the implementation of gender development policies in the energy sector at large, as well as specifically within the RES domain. In the conclusion, proposals are presented for refining national programs, projects, and other program documents of the Republic of Kazakhstan to increase the proportion of women among the employed population within the energy sector, including RES.





The methodology encompasses the collection and analysis of secondary data, including scientific literature, reports from international organizations and research centers, official statistics, as well as media materials. The author extends gratitude to UNDP experts, as well as specialists in the fields of gender and energy policy in Kazakhstan, for conducting interviews and gathering primary data and information. Within the scope of the research, six interviews were conducted.





CHAPTER 1

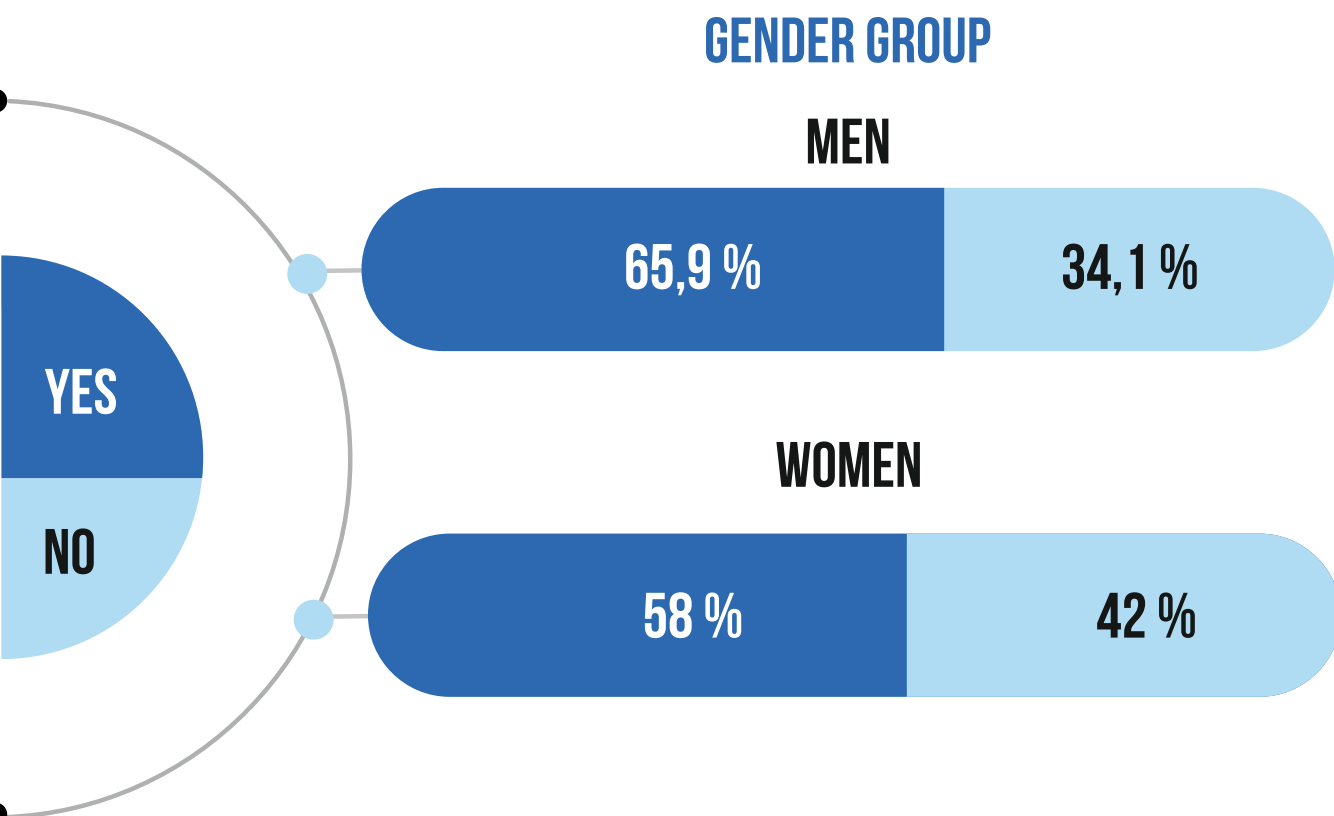
**GENDER BALANCE REVIEW AND RECOMMENDATIONS FOR
THE RES SECTOR IN THE REPUBLIC OF KAZAKHSTAN**



I. ANALYSIS OF ENERGY COMPANIES AND OTHER SECTORAL ORGANIZATIONS DEVELOPMENT IN THE RES SECTOR FOR 2019-2021

According to the sociological study of public awareness of renewable energy implementation conducted by Talap¹ in 2022, in Kazakhstan there are no significant discrepancies between men and women regarding their level of awareness of RES or sources of information about RES (see Table 1). Both social groups support the development of green energy. However, differences emerge when it comes to practical matters. For instance, when asked about the specific differences between renewable and non-renewable energy sources, women show a lower level of awareness compared to men.

TABLE 1. QUESTION: ARE YOU AWARE OF THE DIFFERENCES BETWEEN RENEWABLE AND NON-RENEWABLE SOURCES OF ENERGY?



¹ Talap (2022).



These differences can be attributed to the employment structure. Among the surveyed women, the proportion of those engaged in household work is several times higher than among men, and there is a significantly higher percentage of women employed in the public sector as wage workers, in contrast to men who are more often wage workers in the private sector.

Hence, it can be concluded that the level of support for green energy narratives is equally high among both gender groups. However, women are significantly less involved in the implementation of the green agenda, despite having a higher level of education.

Many international studies indicate that attitudes toward alternative energy issues strongly correlate with personal factors such as age, gender, and education. Various researchers have established that women, on overall, are more concerned about climate change and decarbonization issues than men.²

Meanwhile, as evidenced by the 2022 report by IRENA, the solar sector boasts the highest proportion of women engaged in full-time employment: in 2021, the global average reached 40 %. Solar photovoltaic (PV) energy has emerged as a leading employer within the renewable energy sector, both in terms of the overall number of employees and gender balance. In 2021, the solar PV sector employed 4.3 million individuals, constituting one-third of all renewable energy-related jobs worldwide. Women account for 40 % of this workforce. This figure is nearly twice the proportion of women employed in the oil and gas sector (22 %). It also surpasses the average female representation across all segments of the renewable energy sector, which stands at 32 %.³ However, a contrasting trend is observed in the wind energy sector, where women constitute only 21 % of the total workforce (see Figure 1).

The new report indicates that women excel particularly in the production of solar photovoltaic energy, constituting 47 % of the workforce in this sector. Service providers and developers follow suit with 39 % and 37 % respectively. However, women are least engaged in the solar photovoltaic system installation segment, comprising only 12 % of the workforce in this area.⁴ These findings underscore a substantial potential for harnessing the female workforce in the realm of clean energy.

² Van Engeland, 2019; Semenza et al., 2008.

³ IRENA, 2022.

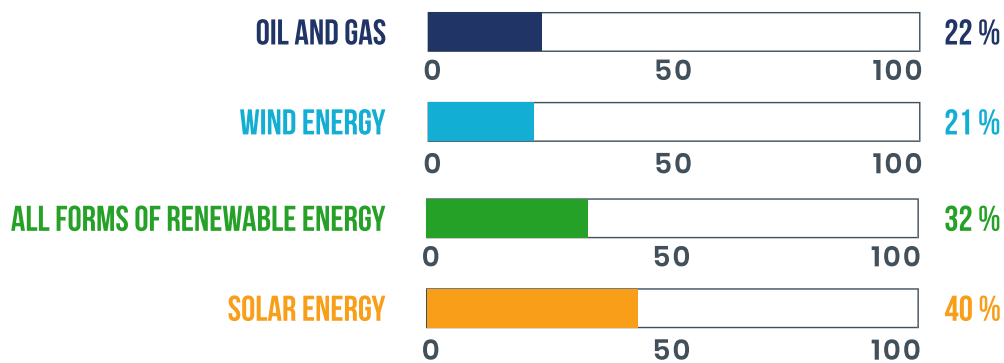
⁴ Ibid.



Nonetheless, in several Asian countries, including Kazakhstan, the situation differs from global averages, with the potential for actively involving the female population in the sector yet to be fully realized.

There is no doubt that female leadership in such stereotypically male-dominated sectors like energy, particularly in the realm of renewable energy, has the potential to mark a new phase in the advancement of women in Kazakhstan and a fresh stride in the development of the entire society.

FIGURE 1 . WOMEN COMPRISE ONLY 21 % OF THE TOTAL WORKFORCE IN WIND ENERGY, WITH 65 % OF THEM IDENTIFYING SIGNIFICANT GENDER BARRIERS WITHIN THIS SECTOR.



SOURCE: IRENA, 2019.



From 2016 to 2019, the Kazakhstan Association of Oil-Gas and Energy Sector Organizations KAZENERGY in collaboration with EBRD conducted a comprehensive study on the role of women in the country's energy sector.⁵ The study is based on a survey of 55,000 employees from 36 energy companies. The study reveals that Kazakhstan experiences a noticeable gender imbalance: "Women are significantly underrepresented in all subsectors of the industry, including oil and gas, electricity generation, coal mining, and renewable energy."

During the period from 2016 to 2019, women constituted on average approximately 25 % of the entire workforce in the energy sector; and there have been no significant positive changes observed over the last three years."⁶ Furthermore, "women comprise only 12 % of the top management and 17 % of the board of directors of the surveyed companies. In one-third of the companies' board of directors, there were no women, and almost half of the surveyed companies have top management teams without any female representation."⁷

When compared to other sectors of the economy, among small and medium-sized enterprises (SMEs), the proportion of women in leadership positions is 43 %. This indicates that in the energy sector, women are not as actively occupying managerial roles as in other industries. The study's authors also examined the career progression of women and men in energy companies and concluded that women advance in their careers at a slower pace than men with equivalent qualifications and education levels.

The research highlights the largest diversified energy holding company in Kazakhstan, Samruk-Energo. This holding is responsible for developing and implementing the state policy on modernizing existing and introducing new generating capacities in Kazakhstan. In the realm of addressing gender inequality, Samruk-Energo has joined the Women's Empowerment Principles (WEPs) of the UN Women and United Nations Global Compact initiative, which encompass key principles for expanding women's rights and opportunities in the economy. The WEPs provide specific recommendations for integrating gender equality within enterprises and across social groups.

⁵ Kazenergy, 2020.

⁶ Ibid.

⁷ Ibid.



Recent studies on women's leadership in Kazakhstan reveal that women firmly occupy positions as informal leaders, addressing societal issues, particularly in the social sphere.⁸ Over the past decades, informal women's leadership has played its role in shaping civil society in Kazakhstan. According to the research hypothesis, the involvement of women activists expands the capacities of the civil sector to assist the most vulnerable members of society. They utilize strategies and tools that influence governmental structures' attitudes and approaches toward social problems.

II. STUDY OF THE SITUATION AND DEVELOPMENT OF RECOMMENDATIONS FOR IMPLEMENTING MECHANISMS TO SUPPORT GENDER EQUALITY IN THE RES SECTOR: PROSPECTS FOR CREATING JOB OPPORTUNITIES FOR WOMEN

Since gaining independence in 1991, Kazakhstan has taken a series of measures aimed at overcoming gender inequality. The primary legislative act in the field of gender policy is the Law "On State Guarantees of Equal Rights and Equal Opportunities for Men and Women," adopted in 2009.

This law regulates issues related to achieving gender equality in the economy, education, politics, health protection, and prevention of violence against women and children.⁹ In 2016, the "Concept of Family and Gender Policy in the Republic of Kazakhstan until 2030" was developed, providing specific recommendations for implementing mechanisms to support gender equality in Kazakhstan.¹⁰

Thanks to the adoption of this Concept, the list of prohibited professions for women in 287 sectors (primarily related to the mining industry, metallurgy, petrochemical industry, construction, and transportation sector) in the Labor Code was reduced by almost a third, opening up opportunities for women's employment in the transport, construction, and chemical industries.¹¹

⁸ Nadirova et al., 2022.

⁹ Online Zakon, 2021.

¹⁰ Adilet, 2018.

¹¹ EBRD, 2019.



Besides, Kazakhstan has joined several key international documents and agreements, including the UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), the Beijing Declaration and Platform for Action, the Convention on the Political Rights of Women, the Convention on the Nationality of Married Women, certain conventions of the International Labor Organization (ILO), and the 2030 Agenda for Sustainable Development.

To ensure gender equality, the National Commission on Women's Affairs, Family and Demographic Policy was established under the President of the Republic of Kazakhstan. This commission is responsible for advising government institutions and developing strategic documents. It includes an expert council comprising representatives of non-governmental organizations.

In 2013, the Kazenergy Women's Energy Club (KAZ WEC) was established, with the objectives of identifying and discussing issues of women in the energy sector, devising rational solutions, and implementing them.¹² After the establishment of KAZ WEC, similar structures emerged within energy companies. Currently, approximately a third of companies have developed their own gender strategy and measures to promote equal opportunities, which extend beyond legal requirements.¹³

Nevertheless, some issues related to the status of women in Kazakhstani society remain unresolved. In the international ranking of The Global Gender Gap Index 2022, Kazakhstan occupies the 65th position out of 146 countries, ranking lower than, for example, Moldova (16), Belarus (36), or Zimbabwe (50). Notably, in 2018, Kazakhstan was positioned 60th, while in 2013, it stood at 32nd place.¹⁴ A concerning trend of widening gender disparities between men and women is observed, substantiated by statistical evidence. Particularly, women's representation in the Kazakhstan Parliament was 27.4 % in 2021, but this figure declined to 18 % after the new parliamentary elections in 2022 (see Table 2). The level of female participation in the labor force is nearly 12 % lower than that of men¹⁵, and the gender pay gap reached 34.2%.¹⁶

¹²Kazenergy, 2021.

¹³Krolik, 2021.

¹⁴World Economic Forum, 2022; 2020.

¹⁵UNDP, 2019.

¹⁶UNDP, 2020.



TABLE 2 . THE PROPORTION OF WOMEN IN SENIOR GOVERNMENT POSITIONS IN KAZAKHSTAN

INSTITUTION	2021	2022	2023
PARLIAMENT	27,4%	27,4%	18 %
GOVERNMENT (PRIME MINISTER, VICE PRIME MINISTERS, MINISTERS)	11% (2)	4% (1)	13 % (3)
AKIMS OF REGIONS/ CITIES OF REPUBLICAN SIGNIFICANCE	5% (1)	5 % (1)	0

**SOURCE: GOVERNMENT OF REPUBLIC OF KAZAKHSTAN (2023),
PARLIAMENT OF REPUBLIC OF KAZAKHSTAN (2023),
OFFICIAL INFORMATION RESOURCE OF PRIME MINISTER (2023).**

Regarding the gender distribution of the workforce in the energy sectors, Table 3 demonstrates a significant disparity between men and women across all highly skilled and moderately skilled workers in Kazakhstan. The participation of women in the leadership of the energy sector and the overall workforce has declined from 2010 to 2020.

The most concerning trend is the fact that women in the coal mining, oil extraction, and energy industries are concentrated in low-skilled and non-specialized professions. Specifically, only in these sectors, does the percentage of the female workforce exceed the male workforce (see Table 3).

TABLE 3 . SHARE OF FEMALE WORKFORCE IN THE ENERGY SECTORS IN KAZAKHSTAN (2010–2020)

OCCUPATION	COAL INDUSTRY	OIL AND GAS INDUSTRY	ELECTRICITY (INCLUDING RELATED RES SECTORS)
UNSKILLED WORKFORCE	56 %	32 %	53 %
SCIENTISTS / IT SPECIALISTS	33 %	31 %	38 %
ENGINEERS	26 %	22 %	30 %
MANAGERS	16 %	14 %	16 %
HIGH SCHOOL-EDUCATED WORKFORCE	14 %	10 %	15 %
TECHNICIANS	12 %	17 %	19 %
EQUIPMENT OPERATORS	15 %	6 %	19 %
SECTOR AVERAGE	22 %	18 %	30 %

SOURCE: MINISTRY OF ECONOMY OF KAZAKHSTAN (2020); ATAKHANOVA AND HOWIE (2022).

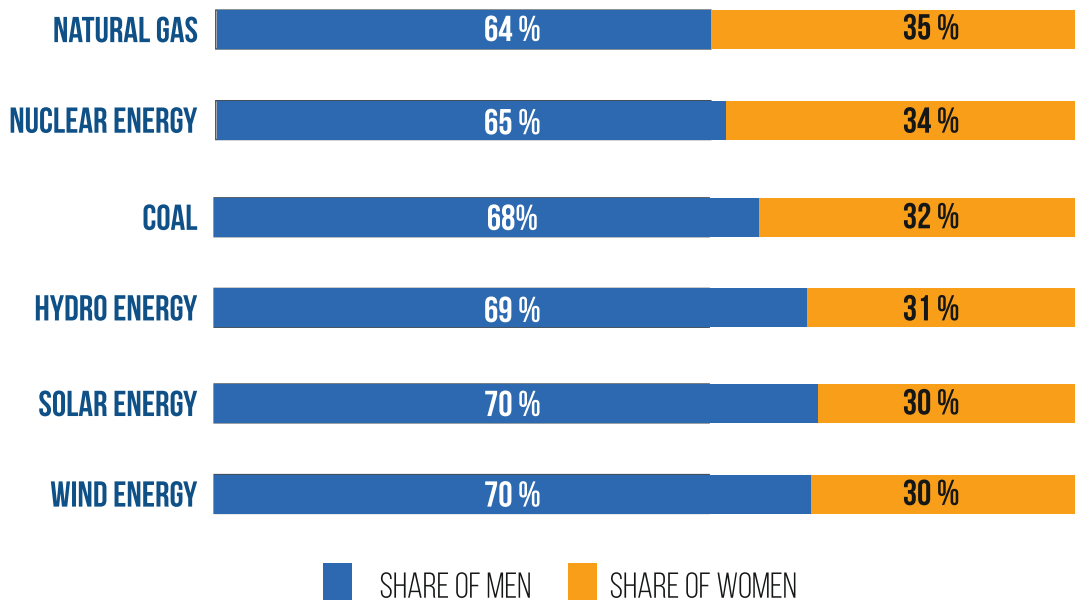
It's important to mention a recent positive change in terms of creating equal working conditions for women and men. Specifically, to eliminate discrimination in the field of labor, in 2021, the list of prohibited professions for women was removed from the Labor Code of Kazakhstan, which had been established back in the Soviet era. After the adoption of the new provision, 219 professions and types of work that were traditionally considered male-dominated and hazardous for women were repealed.¹⁷

¹⁷ El.kz, 2022.

Analyzing the data on wage disparities in the energy professions, there are indications of persistent vertical wage discrimination, which reduces women's motivation to enhance their qualifications.¹⁸ The COVID-19 pandemic significantly worsened this trend of gender inequality in the energy sector.

Meanwhile, from a comparative perspective, the indicators of female and male workforce distribution in the energy sector in other countries show minor variations from the situation in Kazakhstan. For instance, in the USA, the proportion of women in the electricity sector is the same as in Kazakhstan, standing at 30 %. However, the percentage of women employed in the RES sector is lower than in the oil and gas or coal sectors (see Figure 2).

FIGURE 2. MALE AND FEMALE EMPLOYMENT IN THE USA (2022)



SOURCE: U.S. ENERGY AGENCY, 2022. ENERGY AND EMPLOYMENT REPORT.

Regarding gender balance in the field of vocational education, it should be mentioned that in 2022, only 9.8 % of the total number of students in Kazakhstan's energy education were female (see Table 4). It demonstrates a low interest among girls in the energy sector, including the RES sector and STEM professions.

The statistics indicate that female students prefer such fields of professional specialization as medicine and pharmaceuticals (75.6 % of female students in 2022), education (71 %), arts and culture (69 %), services, economics, and management (65.5 %), as well as meteorology (64 %) and law (41.4 %).

¹⁸ Atakhanova and Howie, 2022.

TABLE 4. STUDENTS IN TECHNICAL AND VOCATIONAL EDUCATION INSTITUTIONS BY FIELD OF STUDY GROUPS (AS OF THE BEGINNING OF THE 2021/2022 ACADEMIC YEAR)

FIELD OF STUDY GROUPS	NUMBER OF STUDENTS, PEOPLE		DISTRIBUTION BY SEX, PERCENTAGE	
	WOMEN	MEN	WOMEN	MEN
Total	235 375	258 667	47,6	52,4
Education	55 955	22 844	71	29
Law	5 256	7 451	41,4	58,6
Medicine, pharmaceuticals	74 085	23 931	75,6	24,4
Arts and Culture	10 763	4 848	69	31
Services, economics, and management	41 604	21 964	65,5	34,5
Meteorology, standardization, and certification	463	260	64	36
Geology, mining, and quarrying	1 443	8 631	14,3	85,7
Chemical, oil and gas production	1 690	4 744	26,3	73,7
Energy	1 736	16 061	9,8	91,2
Metallurgy and machine building	632	4 345	12,7	87,3
Transportation (by sector)	842	21 457	3,8	96,2
Manufacture, installation, operation, and repair	18 002	37 861	32,2	36,8
Communications, telecommunications, and information technology. Electronics	11 753	39 949	22,7	77,3
Construction and utilities	4 618	19 372	19,2	80,8
Agriculture, veterinary medicine and ecology	6 533	24 949	20,8	79,2

SOURCE: BUREAU OF NATIONAL STATISTICS (2021).



III. FACTORS IN STRENGTHENING GENDER EQUALITY, ASSESSMENT OF RISKS AND OPPORTUNITIES FOR VULNERABLE GROUPS OF WOMEN

Recently, due to active government and corporate policies, as well as the support of international organizations, Kazakhstan has been demonstrating leading positions in the region by implementing a well-designed strategy to ensure gender equality. Quotas for women in state institutions and state-owned companies are intended to enhance the level of women's involvement in decision-making processes. The significance of women's engagement in the energy sector is actively being reinforced in the oil and gas industry, including through initiatives like the Government-supported Women's Energy Club (KAZ WEC) and intra-corporate women's networking communities.

However, even at the state level, it is acknowledged that Kazakhstan is only at the beginning of its journey toward achieving gender equality and that many of the persisting gender barriers are formed as a result of the absence of appropriate approaches in state economic policy.¹⁹ Women in Kazakhstani society are breaking the "glass ceiling" in the traditionally male-dominated energy industry, but not as quickly as the new challenges require. This situation leads to the depletion of resources needed for the development of gender equality, resulting in a gender gap of 29 % in Kazakhstan.

Until now, women in Kazakhstan have constituted a significant portion of the workforce in low-paying sectors, such as education or services, but compared to men, they are poorly represented in higher-paying sectors, particularly in the energy sector. "The effect of economic growth continues to be diminished due to the existing gender inequality in employment, income, and the burden of unpaid family care."²⁰ As a means of addressing this issue, the new Concept of Family and Gender Policy can serve as an instrument to ensure gender-oriented state participation in all areas, including the energy sector.

¹⁹Adilet, 2016.

²⁰EBRD, 2019.



A study conducted in 25 European Union countries revealed that women, particularly single parents and those above retirement age, are more likely than men to experience energy poverty at some point in their lives,²¹ which will limit their access to renewable energy services and hinder their participation in the energy transition.²² Regarding Kazakhstan it worths mentioning that, firstly, a similar study focusing on RES sector has not yet been conducted.

Secondly, considering that vulnerable households were examined within the context of broader poverty issues, one can assume that access to education and employment opportunities in the field of RES is restricted for women among the most vulnerable segments, in comparison to less vulnerable groups. This fact also extends to issues related to energy consumption.

However, despite achieving tariff parity between renewable energy-produced electricity and coal-generated electricity, the low awareness among households regarding the utilization of various renewable energy technologies in daily life is a restraining factor. Additionally, a centralized energy system leads to low grid tariffs and does not promote widespread adoption of RES by households.

This problem is exacerbated in rural areas where vulnerable groups are even more prevalent than in larger cities. This is attributed to the high level of male migration from rural to urban areas, as well as the shorter life expectancy of men compared to women. Consequently, women-led households, especially led by elderly women, in rural areas often face challenges in accessing energy.

In general, rural areas are insufficiently connected to gas networks. A sizable portion of households in these areas uses coal for heating, which often entails labor-intensive work in winter conditions. This places an additional burden on women heading households, making them the most vulnerable population group requiring priority intervention from both the government and international organizations. It should also be noted that the quality of housing in rural areas often serves as a barrier to the adoption of renewable energy technologies.

²¹ According to the European Commission's definition (2023), energy poverty refers to a situation in which households are unable to cover electricity bills due to those bills constituting a high percentage of the consumers' overall income. In such circumstances, consumers are compelled to reduce their household energy consumption to an extent that adversely impacts their health and well-being.

²² European Parliament, 2019.



Many of these homes have low energy efficiency levels thus wasting a significant portion of the energy consumed. This is why merely replacing coal with solar- or wind energy may not achieve the desired outcome. A comprehensive set of measures for insulation and enhancing energy efficiency in rural housing is necessary. Only then can RES effectively replace energy production from traditional sources.

IV. ANALYSIS OF FOREIGN COMPANIES' CORPORATE PRACTICES FOR GENDER EQUALITY IN THE ENERGY AND RES SECTOR: LESSONS FOR KAZAKHSTANI COMPANIES

Gender experts highlight successful practices of gender mainstreaming into corporate policies of companies with foreign participation.²³ They emphasize that, overall, in addition to the recent emergence of intra-corporate women's networking communities in the energy sector in Kazakhstan, cross-industry initiatives are widely prevalent. These initiatives aim to expand opportunities for women entrepreneurs and business founders. In Kazakhstan, women predominantly engage in entrepreneurial activities as individual entrepreneurs within the service sector. Thanks to flexible self-employment conditions, they can better balance family and career compared to traditional employment, where stringent workplace attendance requirements are imposed.²⁴

At the same time, despite recent positive trends, women in the energy sector still rarely occupy key positions, unlike in small and medium-sized businesses, for example. They also lag in terms of their representation among all employees. In this regard, it is beneficial to refer to the experience of foreign companies that employ and promote new tools and practices to enhance working conditions for women engaged in the RES sector.

Table 5 compiles international practices related to the employment and work of women in RES companies. Three main areas of application within companies can be highlighted: overall corporate policy, human resources policy and recruitment, and gender policy. These practices contribute to improving the quality and conditions of work and promoting high-skilled female employment within RES companies.

²³Krolik, 2021..

²⁴ Krolik, 2021.



TABLE 5. INTERNATIONAL PRACTICES FOR THE EMPLOYMENT AND WORK OF WOMEN IN RES COMPANIES

APPLICATION FIELD	PRACTICES
Corporate policy	<p>Partnership with women's organizations: Companies can collaborate with women's organizations to promote women in the industry. This may involve sponsoring events and supporting training and development programs. Encouraging practices that establish mechanisms for feedback, consultation, and collaboration to ensure that the voices of various stakeholders are heard and considered.</p> <p>Partnership with educational institutions: Collaborate with schools and universities to promote STEM education for girls through organizing competitions, internships, and job shadowing opportunities, including internships in partner foreign companies. Establishing career centers for girls at universities. Deliver presentations by RES companies to female STEM students at universities.</p> <p>Closing the gender pay gap: Companies should implement transparent pay systems and conduct regular reviews of pay fairness to ensure equal pay for equal work.</p> <p>Inclusive policies: Companies can create inclusive workplaces by actively hiring and promoting women and other underrepresented groups. These programs should provide opportunities for skill development, career advancement, and leadership training. Implementing comprehensive policies to combat discrimination, harassment, and retaliation for reporting harassment to ensure a safe and inclusive work environment.</p>



Training: Conduct internal educational seminars for all employees and partners to address gender stereotypes and unconscious biases and promote a culture of inclusivity and respect. Establish networks for women within companies and organize practical workshops and other events within these networks. Actively involve men, especially those in leadership positions, to enhance communication in support of gender equality.

Gender-sensitive procurement: Implement diversity supplier programs that promote the inclusion of women-owned businesses in supply chains. Introduce practices within organizations to consider gender composition and inclusivity as criteria in procurement processes.

Human resources policy and recruitment

Development of gender-sensitive personnel recruitment strategies, and analysis of staff turnover. Regular gender-sensitive anonymous surveys and 360-degree feedback aimed at determining the dynamics of staff well-being.

- Provision of extended pregnancy and maternity leave benefits. Adaptation programs for employees returning from maternity leave. Hybrid and flexible maternity policies with reduced work weeks.
- Provision of financial assistance to large families.
- Flexible work schedule: many women may have additional caregiving responsibilities outside of work. Companies can attract more women by offering flexible working conditions such as remote work, part-time work, or flexible schedules.
- Scholarships for women pursuing degrees in STEM fields while working in the RES sector companies.
- Conducting gender-sensitive exit interviews when an employee decides to leave the company, to understand the reasons for their resignation.



Gender policy

- Hiring a full-time or part-time gender expert to conduct gender analysis and identify barriers and successful practices in corporate policy.
- Developing an action plan based on the above analysis and creating a task force with individuals responsible for implementing the plan.
- Developing gender-sensitive indicators and collecting data.
- Assessing and presenting reports to employees to gather feedback.

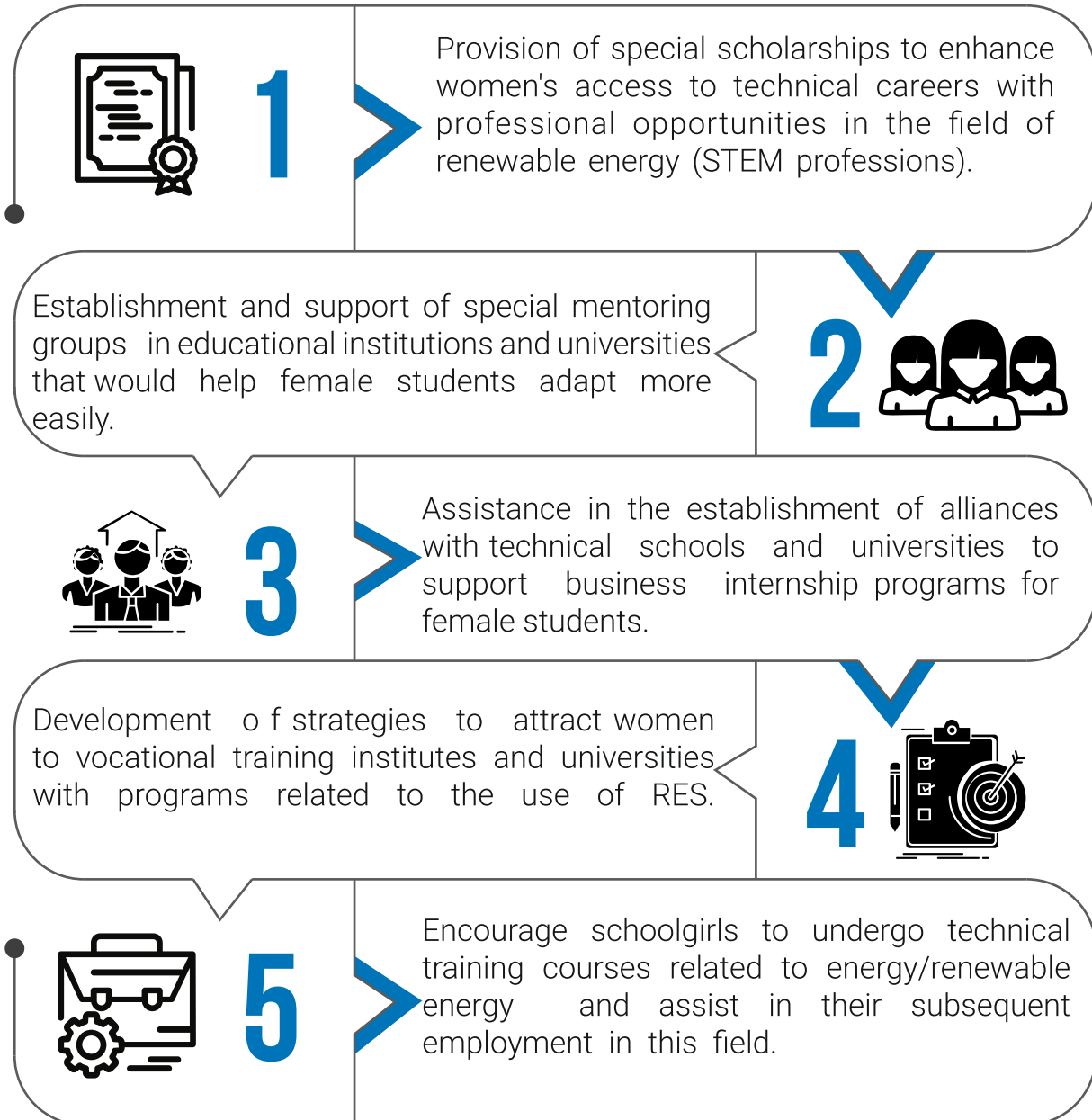
SOURCES: NELSON AND KURIAKOSE (2017); GREEN CLEAN SOLAR (2023); ENERGY2EQUAL (2021); RESPONDENTS 2, 4, 5.



LIST OF RECOMMENDATIONS TO ADDRESS THE CHALLENGES



It is also important to draw on international experience in improving educational opportunities for women in the RES sector. Summarizing the review of existing practices and successful experiences from different countries, the following recommendations can be made:





Until 2022, in Kazakhstan, there were no educational programs in the energy sector that were exclusively focused on the preparation of women. It was only on October 21, 2022, that Atyrau University of Oil and Gas launched the first Executive MBA program in Central Asia and Kazakhstan, titled Women's Leadership in Energy. This program is designed to prepare professional and accomplished women managers and business partners capable of developing effective strategies to achieve desired goals in both business and life.

The mission of the program is to form and develop a professional community of successful women ready to participate in addressing significant socio-economic issues in the energy field and advancing the position of women on the industry and in Kazakhstan.



V. ASSESSMENT AND RECOMMENDATIONS IN THE IMPLEMENTATION OF SDGS AND ESG AT COMPANY LEVEL IN THE RES SECTOR: GLOBAL PRACTICES IN GENDER EQUALITY

One of the successful examples of promoting the interests and employment of women is the experience of India, which has implemented a risk-sharing mechanism in the financing scheme of projects in the green energy sector.²⁵ The Indian mechanism of partial risk sharing for energy efficiency in the financing of the Clean Technology Fund has ensured improved gender conditions for energy service companies.

This scheme has helped enhance gender-sensitive working conditions through:

- a) the adoption and approval of only those new projects that improve working conditions for women;**
- b) the verification of minimum safety/work conditions that companies must comply with when obtaining project loans.**

Thus, risks for women were accounted for in the development phase of energy-saving projects. This approach allowed for the practical development of gender-sensitive criteria at the project's financial approval stage. As a result, companies that embraced these criteria gained more opportunities to access microcredits in the field of energy-saving projects.

Another example of successful practices pertains to the operations of the wind energy company Gamesa, which developed corporate mechanisms to support non-discriminatory labor practices. The company established a dedicated equality program. This set of criteria promotes non-discriminatory hiring practices, equal opportunities for professional development and advancement for both women and men, as well as recognition of the need for work-life balance.

A special commission was created to monitor the implementation of these practices. The company adheres to the Women's Empowerment Principles, which call for the elimination of discriminatory employment practices.

²⁵World Bank, 2015.



Another example of successful practices was implemented in Papua New Guinea where a provision in the field of renewable energy was developed and adopted, stipulating that the proposed renewable energy project plan would contribute to achieving gender-positive outcomes beyond the project's direct objectives. To achieve this, gender experts are hired by the state Renewable and Alternative Energy Division for consultation and communication with women.

This mechanism allows for receiving feedback. Companies are required to develop and provide an investment plan that includes gender-sensitive criteria, specifying that among its outcomes is the aspiration for "more equitable access to modern energy services and employment opportunities for both men and women in renewable energy enterprises."²⁶

VI. RES DEVELOPMENT IN REMOTE COMMUNITIES AS A MEANS OF SUPPORTING WOMEN IN DOMESTIC SETTINGS

The Government of Kazakhstan has announced its transition towards a green economy ahead of other Central Asian nations. In alignment with the Paris Climate Agreement, Kazakhstan has set a target to reduce greenhouse gas emissions by 15 % by the year 2030 compared to 1990 levels. Additionally, there are ambitious plans to increase the share of renewable energy in the overall electricity production, aiming for 6 % by 2025, 15 % by 2030, and 50 % by 2050. These plans are quite ambitious considering Kazakhstan ranks as the fourteenth largest emitter of green house gases globally, and over 70 % of the country's electricity is generated by coal-fired power plants.²⁷

However, the transition to RES holds significant promise. According to preliminary calculations, by 2050, the transformations within the green economy could contribute to an additional 3 % increase in Kazakhstan's GDP, generate over 500,000 new jobs, and foster the emergence of new industries in both manufacturing and service sectors. This would ultimately lead to elevated living standards for the people of Kazakhstan.²⁸

²⁶ ADB, 2013.

²⁷ EBRD, 2019.

²⁸ Informburo, 2019



These assessments highlight that the green transition has the potential to notably enhance the well-being of the population, especially vulnerable groups residing in the country's regions. From a gender perspective, improvements in air quality and the overall environmental situation, coupled with the creation of new employment opportunities, will undoubtedly positively impact women. They will experience reduced illness rates, spend less time and financial resources on healthcare for their children and family members, and gain the opportunity to embark on careers within new projects focused on advancing renewable energy.

Renewable energy demands more labor-intensive processes compared to fossil fuels. For instance, generating 1 GWh of electricity in wind energy requires a larger workforce than in the coal industry; the solar energy sector employs more workers than the oil and gas industry combined, and the biofuel sector utilizes more specialists than both the coal and nuclear sectors combined.²⁹

In the global renewable energy industry, around 8 million people were employed in 2016, and this number increased to 11.5 million in 2019. By 2050, renewable electricity will create 24.3 million full-time jobs across 139 countries, while 27.7 million jobs will be lost in fossil fuel, biofuel, and nuclear-related industries.³⁰ This trend highlights that as renewable energy production expands, the workforce engaged in the renewable energy sector will also grow. Furthermore, between 2010 and 2022, there has been an increasing shortage of qualified labor for renewable energy systems globally, and even greater demand for such labor is projected in the future.³¹

A significant increase in the workforce can occur in rural areas near established power plants, and solar and wind farms. Investments in RES also largely create job opportunities for highly skilled specialists. Certain stages of component production, project preparation, and the construction of renewable energy facilities require skills obtained through academic degrees in technical fields, where women are underrepresented both in Kazakhstan and in several other countries.

²⁹ Walz and Shoemaker, 2017; De Place, 2009; Solar Foundation, 2016; DOE, 2017.

³⁰ Jacobson et al., 2017.

³¹ Ram et al., 2020; Swift et al., 2019.



Similarly, women engaged in STEM are less prevalent in the renewable energy sector compared to their male counterparts, as evidenced by the very low percentage of such women in the field. Around 52 % of women globally employed in this domain leave their jobs between the ages of 35 and 40 due to the lack of female role models to emulate, feelings of isolation in male-dominated work environments that don't align with their problem-solving approach, and the challenge of balancing domestic responsibilities with long working hours and extensive travel, which are characteristic of such companies.³²

Power plants operating on RES can also provide employment opportunities for workers without specific qualifications or those who can be trained for their tasks before the construction of solar or wind farms for renewable energy production. These roles encompass tasks like site cleaning, road construction, and component transportation, as well as operation and technical maintenance of installations. However, this field requires further research to accurately determine the number of workers involved and achieve a gender balance.

In some cases, women are adequately trained for activities related to construction, but the predominantly male environment they work in often leads them to discontinue such activities. The construction and technical maintenance of renewable energy plants can create jobs for micro-, small-, and medium-sized enterprises that provide services associated with operations. These services can be paid for by local enterprises, which could become sources of employment for women. The transition to renewable and decarbonized energy potentially offers a range of social and economic benefits, including new job opportunities. Therefore, the opportunities and advantages of this transition must be equally accessible to all social groups.

While the process of transitioning to renewable energy in Kazakhstan is progressing slowly, there have been some notable achievements. In 2013, the country launched its first wind power plant – the Kordai Wind Power Plant – with a capacity of up to 21 MW. By 2022, due to the increase in the number of solar and wind power stations, the share of RES in Kazakhstan's total energy production reached 4.5 %, a 3.5 % increase compared to 2013.³³

³² Harvard Business Review, 2008.

³³ Kursiv, 2023.



VII. PRACTICAL RECOMMENDATIONS FOR LARGE AND MEDIUM-SIZED COMPANIES IN KAZAKHSTAN ON THE DEVELOPMENT OF WOMEN'S CAREER POTENTIAL IN THE RES SECTOR

Energy projects, especially in RES, hold significant potential for advancing gender equality. To achieve this, we believe it is necessary to undertake a series of specific actions. Feasibility studies (FS) for each energy project should incorporate gender principles and account for end-user needs. It is essential to actively engage women in discussions from the very planning and implementation stages.

To enhance the gender equality situation within Kazakhstan's energy sector, there is a need to revise corporate policies that have hitherto led to undue advantages for men. Ongoing trends in reshaping human resource management policies to support the career advancement of women in traditionally conservative industries such as energy and RES should be geared towards overcoming informal barriers. It is also important to continue the established practice of creating women's network organizations within major energy companies, which will contribute to the professional growth of female employees. Thanks to this practice, Kazakhstan is a leader in the Central Asian region in terms of implementing gender solutions.

Corporations, governmental bodies, and international institutions should more actively collaborate and exchange experiences with each other. While individual energy companies and governmental agencies should develop their own policies and strategies to ensure gender equality, their greatest success can be achieved through cooperation with one another.

Women should be more actively engaged in decision-making processes that impact their lives and should also take a more active role in strategically important investment projects aimed at infrastructure and energy development.



VIII. RECOMMENDATIONS FOR IMPROVEMENT OF GENDER BALANCE IN RES FIELD



To ensure gender equality during the transition to a sustainable energy model, recommendations should be developed for three main categories of female work force:

**1**

1.1. Mid-skilled and high-skilled professionals in the renewable energy sector in Kazakhstan. There is an inadequate representation of women compared to men working in the RES sector. The proportion of women receiving engineering and technical education is higher, while the proportion of women transitioning from engineering education to work in the RES field remains low.

It generally reflects the early stages of market development and factors such as unattractive working conditions, stereotypes, and a lack of incentives and opportunities for professional growth in the RES sector. International organizations could assist in overcoming these barriers.

1.2. Decision-makers in the energy sector. Limited representation of women exists in the bodies that define energy policies and make decisions in Kazakhstan. There is a significant gender gap in the proportion of women holding positions that influence energy policy both in the corporate sector and in the state energy sector.

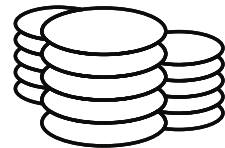
1.3. Energy consumers. It is also important to study issues related to gender differences in the development of energy demand and consumption. Analysis of scientific literature and reports revealed a complete absence of research on this issue in Kazakhstan. Therefore, gaps remain in understanding gender differences at the household level in electricity consumption and demand generation.

**2**

This report has identified the absence of disaggregated gender-specific employment data in the RES sector, which poses a problem, for two reasons.

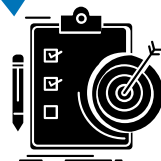
Firstly, it hinders the monitoring of progress toward achieving gender equality and evaluating initiatives aimed at achieving gender equality. Secondly, the lack of data conceals the insufficient representation of women in wind, solar, and hydro energy fields. International organizations, particularly UNDP, could prioritize the collection of disaggregated data to better identify employment issues within the RES sector. It is also necessary to conduct research and data collection at the household level.

Based on successful international practices, it is necessary to provide specialized scholarships to broaden women's access to technical careers with professional opportunities in the RES sector.

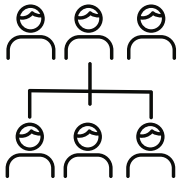
3**4**

It is equally important to facilitate the establishment of alliances with technical schools and universities to support business internship programs for female students.

Develop strategies to attract women to vocational training institutes and universities offering programs in RES utilization.

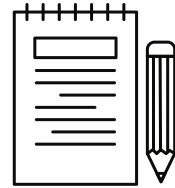
5**6**

Support the retention of talented women in the workforce by implementing work arrangements that facilitate a work-life balance.



Fostering networking among female professionals in the RES sector is an essential tool for creating interest groups that can promote their professional activities in this field.

Verify the minimum safety/work conditions and gender aspects that companies must adhere to when obtaining project credits.

8

Support women within companies and create working conditions that facilitate a work-life balance.



CHAPTER 2

ANALYSIS OF LEGISLATION AND REGULATORY ACTS IN THE FIELD OF GENDER EQUALITY





I. ANALYSIS OF LEGISLATION OF THE REPUBLIC OF KAZAKHSTAN AIMED AT FACILITATING WOMEN'S ACCESS TO THE REALIZATION OF THEIR POTENTIAL IN THE ENERGY SECTOR

Gender equality, defined as the prohibition of discrimination based on gender, is enshrined in the Constitution of the Republic of Kazakhstan. Article 14 of the Constitution of the Republic of Kazakhstan declares that "no one may be subjected to any form of discrimination on grounds of origin, social, official and property status, gender, race, nationality, language, attitude to religion, beliefs, place of residence or any other circumstances."

As for international conventions and agreements, Kazakhstan has signed the Beijing Declaration and Platform for Action (1995) and ratified the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW, 1998), as well as signed the Optional Protocol to CEDAW (2001).

The National Action Plans on Human Rights for 2009-2012 and 2017-2020 highlight the need to ensure gender equality in the labor market, as well as in pension insurance reform for elderly women, combating domestic violence, preventing human trafficking, and increasing the representation of women in elected positions and leadership roles in the government.

The Government of Kazakhstan previously adopted the Law "On State Guarantees of Equal Rights and Equal Opportunities for Men and Women" (No. 223-IV of December 8, 2009), according to which both Kazakhstani men and women were granted equal rights to engage in any social activities. Kazakhstan became the third country in Central Asia – after Tajikistan and Kyrgyzstan – to enact a law on gender equality. The Law outlined key provisions concerning gender-based discrimination and reaffirmed state guarantees in various sectors, including public service, the labor market, healthcare, education, and family life. The Law ensures equal rights and equal opportunities for men and women in all spheres of public and societal life (Article 3).



Equal rights and equal opportunities for men and women in labor relations are guaranteed, including:

1. When concluding an employment contract.
2. In having equal access to vacant positions.
3. In matters of professional development, retraining, and career advancement (Article 10).

Article 9 of the Law provides "guarantees of equal access for men and women to public service," with "heads of state bodies are obliged to ensure equal access for men and women to public service by their experience, abilities, and professional training." Article 11 of the Law ensures gender equality in the rights and responsibilities of men and women in marital and family relations and child-rearing. Articles 13 and 14 address state control and supervision over compliance with the legislation of the Republic of Kazakhstan on state guarantees of equal rights and equal opportunities for men and women, as well as the interaction between state and public institutions.

In 2012, the Guidelines for Gender Expertise of Draft Regulatory Legal Acts were developed and approved, outlining the principles and key stages of gender expertise. On May 29, 2013, an amendment was introduced to the resolution of the Government of the Republic of Kazakhstan dated May 30, 2002, No. 598 "On Measures of Normative Activity Improvement," which regulates the conduct of scientific expertise. As a result, gender expertise of draft laws is carried out within the framework of scientific expertise. In 2016, the Government of the Republic of Kazakhstan developed the Concept of Family and Gender Policy in the Republic of Kazakhstan until 2030, aiming to "implement the principles of gender equality in all spheres of societal life."

Considering the adopted international commitments, the Strategic Development Plan of the Republic of Kazakhstan until 2025 (approved by the Decree of the President of the Republic of Kazakhstan on February 15, 2018, No. 636) enshrines the task of "preserving family values and preventing gender discrimination" and includes measures to achieve it through the following Initiatives:

Initiative 6.13 "Improvement of legislation in the field of family and gender policy" envisages the enhancement of legislation related to ensuring equality of rights and opportunities for men and women in family relations, protection of motherhood and childhood, increased parental responsibility for child upbringing, prevention of all forms of discrimination and gender-based violence.



Initiative 6.14 "Strengthening the institute of gender equality through state regulation and implementation of gender impact assessment in the system of state and budget planning" includes the establishment of an authorized body for leadership and cross-sectoral coordination in the field of gender policy, integration of gender approaches, including gender statistics, into the system of state and budget planning.

Initiative 6.15 "Creating conditions for ensuring equal employment of men and women" involves incorporating gender-sensitive indicators into the system of national accounts that measure employment in the informal sector, unaccounted domestic care work, home-based work, paid domestic work, as well as improving legislation and practices regarding labor regulations and safety, implementing and expanding flexible forms of employment with a gender perspective, providing state support for expanding women's economic opportunities through employment and entrepreneurship, including in traditionally male-dominated sectors.

Initiative 6.16 "Ensuring equal access of men and women to all types of resources necessary for entrepreneurial activities" entails conducting regular analysis of the accessibility of state services and state support for small and medium-sized businesses from a gender perspective based on residence, age, disability, and property status. It also involves improving policies to reduce administrative burdens, and excessive regulatory restrictions, including for female entrepreneurship.

Initiative 6.17 "Promoting gender education" aims to develop a gender education and awareness system covering all age groups, contributing to the elimination of gender stereotypes. It also aims to expand professional development programs focused on gender equality and comprehensive consideration of gender aspects in the development and adoption of state decisions.³⁴

This list of laws and legislative acts can serve as a starting point for promoting and facilitating women's access to employment and realizing their potential in the energy market, including the RES sector, considering typical life situations and limitations that women face in their everyday lives.

³⁴ Adilet, 2018.



II. IDENTIFICATION OF BARRIERS AND RECOMMENDATIONS FOR AMENDING REGULATORY DOCUMENTS TO ENHANCE GENDER BALANCE IN THE ENERGY SECTOR, INCLUDING THE RES SECTOR

While the Constitution of Kazakhstan provides necessary guarantees of equality, there are gaps in the implementation of measures aimed at realizing women's guaranteed rights. The legislative documents of the Republic of Kazakhstan do not specifically address gender equality in various economic sectors, including the RES sector. The government has approved a plan that requires a gender analysis of legislative and regulatory acts. At this stage, consultations with gender experts are important while developing new legislative projects to assess their diverse impact on women and men. Subsequently, experts can provide recommendations for revising provisions that could lead to gender-based discrimination or vulnerability of women or men.

It is worth noting that currently there is still a lack of gender expertise within the group responsible for developing legislative projects in various fields, which hinders the integration of a gender perspective into the regulatory framework. Besides, there are various obstacles to effective data collection related to gender equality and the widespread integration of gender issues at all levels, both national and local. It hampers the development of relevant normative documents to enhance gender balance.

In 2020, the EBRD published a comprehensive study on the role of women in Kazakhstan's energy sector for 2016-2019. The authors conclude that the turnover rate among women is consistently higher than among men, indicating that efforts to increase the number of women in leadership positions should focus on retaining and incentivizing experienced women in the middle and later stages of their careers.



III. GLOBAL EXPERIENCE IN DEVELOPING A LEGISLATIVE FRAMEWORK FOR THE IMPLEMENTATION OF GENDER POLICY IN THE ENERGY SECTOR

Relevant experience in promoting gender development in the energy sector as a whole and specifically in the RES sector can be drawn from such nations as Norway, Sweden, and other Nordic countries. Key driving factors for strengthening gender balance in Scandinavia include the adoption of gender equality policies and equal pay provisions in both public and private enterprises.³⁵ Analysis reveals that gender equality is more balanced in companies that actively promote equal pay policies.

In 2009, Sweden enacted the Discrimination Act, which requires organizations with more than 25 employees to conduct pay mapping every three years. This mapping entails analyzing the wage structure along with a detailed action plan to promote gender equality within the organization. Furthermore, in cases of discrimination, employers are mandated to conduct investigations and take measures against such discriminatory practices.

Since 2018, the Swedish government has tasked the Swedish Gender Equality Agency with supporting state institutions in the integration of gender issues into all their operations. This initiative is referred to as the Gender Mainstreaming in Government Agencies program (GMGA), and its objective is to integrate gender equality into all aspects of each agency's work.³⁶

Besides, in Norway and Sweden, it is legislatively established that both men and women have the right to a work-life balance, which makes employment in the RES sector appealing to the female population. The work-life balance is enshrined in the job descriptions of the executive leadership of both public and private companies. Specifically, provisions have been developed to support parents and their caregiving responsibilities, implying equal periods for childcare for both parents following the birth of a child. Importantly, compliance with these provisions and practices is actively monitored by government bodies that conduct audits of wage equity and adherence to other gender equality policies within energy companies.

³⁵ Nordic Energy Research, 2021.

³⁶ Sweden.se, 2022.



The experience of the United Arab Emirates (UAE) is also relevant. The government has developed the UAE Gender Balance Council Strategy until 2026, aimed at enhancing the UAE's ranking in global competitiveness reports on gender equality and achieving gender balance in leadership positions. A dedicated UAE Gender Balance Council has been established, performing several functions, including the review of legislation, policies, and programs to achieve gender balance in workplaces.³⁷

The Council monitors and provides recommendations for fulfilling gender balance commitments and oversight, integrating gender into policies and programs, and engaging personnel in achieving gender balance across all sectors, including the energy industry. The establishment of a similar Council in Kazakhstan, with its inclusion in a subgroup focusing on gender balance in the RES sector, could be a significant milestone in coordinating gender-related matters within the country.

IV. PROPOSALS FOR IMPROVING NATIONAL LEGISLATION TO INCREASE THE PROPORTION OF WOMEN EMPLOYED IN THE ENERGY SECTOR, INCLUDING THE RES SECTOR

The successful transition to RES in Kazakhstan signifies equitable access to natural resources and benefits distribution, while also minimizing risks for diverse social groups. Gender and poverty are interconnected, mutually reinforcing barriers to social change.

Thus, the shift towards a green economy is not gender-neutral and requires a comprehensive consideration of the human dimension. Encouraging women's initiatives for participation in the green economy constitutes a pivotal factor for gender development within the country. Primary obstacles to this process include limited access to information and markets, low financial and legal literacy, and deeply entrenched societal stereotypes and biases, all of which hinder women in Kazakhstan from fully engaging in the green economy or energy sector.

Amplifying women's roles in these domains can be facilitated through the organization of green fairs, the promotion of new technologies, and highlighting the socio-economic advantages of RES adoption. Given that the banks operating in the country impose high-interest rates on green technology implementation, the establishment of support groups and the expansion of rights and opportunities for women entrepreneurs could be explored as viable avenues.

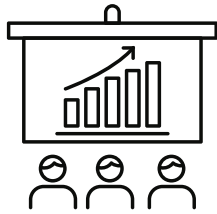
³⁷ The United Arab Emirates' Government, 2023.



LIST OF RECOMMENDATIONS FOR SOLUTIONS PROBLEMS



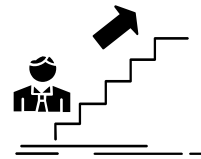
To enhance gender equality, including in the energy/RES sectors, it is important to consider the following steps in the field of legislation:

**1**

It is necessary to enhance the potential of state institutions in conducting gender balance assessments through the implementation of national programs and projects. This should involve improving the skills and resources of government personnel in applying gender

principles when developing, implementing, and evaluating state policy measures from a gender perspective, both at the national and local levels. It is also necessary to evaluate the incorporation of gender principles by studying examples of best practices and successful projects. Conditions should be created for widespread dissemination of the results of such practices and projects.

The state institutions (specifically, the National Commission on Women's Affairs, Family and Demographic Policy under the President of the Republic of Kazakhstan) should be empowered to conduct training programs and information campaigns for all government bodies responsible for gender development.

2**3**

Strengthening state policy, mainstreaming gender, and introducing a gender-responsive state budget by expanding the coverage and depth of gender-disaggregated statistics, including by sectors.

This involves enhancing the coherence of activities among state institutions in data collection and processing, as well as improving access to gender-disaggregated data.

Energy projects, including those in the renewable energy sector, have sufficient potential for enhancing gender balance. Feasibility studies for each energy project should include gender assessments and female specialists must be engaged in discussions during the planning

4

and implementation stages. Successful "local content" policies in the energy sector can be applied, wherein foreign companies commit to incorporating local content elements in their projects (e.g., 30 % local workforce, materials, suppliers, etc.). Drawing from this experience, it could be made mandatory to include a certain proportion of female employees (30 % to 50 %) in staffing for new projects in the RES sector.

At the legislative level, promote the "equal pay for equal work" principle following the example of Norway and Sweden. Regular pay mapping within companies should also be conducted, along with the development of a detailed action plan to advance gender equality.

**6**

Eliminate barriers and stereotypes for integrating gender balance in "traditional" sectors of public life and the economy, such as the energy sector, through various training programs funded by state subsidies and private investments. Incorporate gender-inclusive green economy principles into school and university curricula.



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