

# GENDER IMPLICATIONS IN THE ENERGY SECTOR OF THE KYRGYZ REPUBLIC



National Human Development  
Report of the Kyrgyz Republic 2023/2024

*Contributing Paper*





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## Acronyms and Abbreviations

ADB – Asian Development Bank  
CA – Central Asia  
CAWEP – Central Asia Water and Energy Program  
CLIENT – Climate and Environment Program  
EU – European Union  
GFC – Green Finance Centre  
GWNEN – Global Women’s Network for Energy Transition  
ICMA – International Capital Markets Association  
HPP – Hydroelectric power plants  
KR – the Kyrgyz Republic  
MEC KR – Ministry of Economy and Commerce of the Kyrgyz Republic  
MHH – Male-headed household  
MICS – Multiple Indicator Cluster Survey  
MOE KR – Ministry of Energy of the Kyrgyz Republic  
NAP – National Action Plan  
NDC – Nationally Determined Contribution  
NEP – National Energy Program  
NHDR – National Human Development Report  
NSC KR – National Statistical Committee of the Kyrgyz Republic  
OJSC – Open joint-stock company  
OSCE – Organization for Security and Cooperation in Europe  
RES – Renewable energy sources  
SDGs – Sustainable Development Goals  
STEM – Science, technology, engineering, and math  
UNDP – United Nations Development Program  
UNEP – United Nations Environment Program  
UNICEF – United Nations  
USAID – U.S. Agency for International Development  
WHH – Women-headed household

# Summary

This study provides an in-depth analysis of the significant gender disparities in the energy sector in the Kyrgyz Republic and their impacts on women's access to energy and roles within the sector.

Addressing energy vulnerability from a gender perspective is essential for achieving gender equality and social justice. Women in the Kyrgyz Republic face unique challenges in accessing energy due to social, economic, and cultural factors. This report aligns with the Sustainable Development Goals (SDGs), particularly SDG 5 (gender equality) and SDG 7 (affordable and clean energy), to underscore the importance of integrating gender considerations into energy policies and strategies.

Key Findings reveal significant gender gaps in energy legislation and strategies, energy production, energy access and use, and health implications of using dirty energy. Despite some advances in gender equality policies, their implementation in the energy sector remains inconsistent. National and sectoral strategies often lack comprehensive gender considerations. Women are significantly underrepresented in energy-related education and employment. Gender segregation in these fields limits opportunities for women, perpetuating economic and professional inequalities. Women's participation in decision-making roles within the energy sector is minimal, except the area of renewable energy entrepreneurship. Increasing women's representation in leadership roles is crucial for developing gender-sensitive energy policies and strategies.

Gender impacts of energy infrastructure are profound, particularly affecting women's access to reliable and clean energy. There is a pressing need for energy infrastructure that meets women's specific needs and reduces their vulnerabilities. The use of dirty fuels for cooking and heating leads to severe health issues for women and children, who are more exposed to indoor air pollution. This exposure results in higher rates of respiratory problems and other health concerns.

Recommendations include enhancing gender analysis mechanisms and procedures; incorporating gender equality in national and sectoral strategies and plans; promoting sustainable financing of gender programs and ensuring government commitment to addressing gender issues in energy; increasing women's participation in energy education and employment; supporting women entrepreneurs; improve gender-disaggregated data collection; developing gender-sensitive energy infrastructure.

The disparity between women's roles as primary energy users and their limited participation in energy decision-making underscores the urgent need for greater gender sensitivity in strategic planning processes and energy policy development in the Kyrgyz Republic. By excluding women from these decisions, there is a risk of overlooking their unique perspectives and needs, as well as their potential as change agents, thereby undermining efforts toward achieving gender equality and a just energy transition.

# 1. Introduction

A successful and inclusive transition to cleaner and more sustainable energy sources requires recognizing the crucial role of women in this process. By harnessing the potential of women as drivers of socioeconomic and systemic change, the Kyrgyz Republic can speed up its energy transition while simultaneously promoting gender equality and creating the conditions for achieving social justice.

Addressing energy vulnerability from a gender perspective in the country is critical for several reasons. Firstly, it is consistent with the Sustainable Development Goals (SDGs), in particular SDG 5, which aims to achieve gender equality and the empowerment of all women and girls. Women often face particular challenges in accessing energy and energy consumption due to different social, economic and cultural factors. A gender-sensitive approach to energy policy development promotes greater inclusiveness by ensuring that decisions recognize and account for the different barriers, opportunities and needs of men and women in the Kyrgyz Republic.

Second, unequal access to energy resources has a much greater impact on women than men due to existing gender roles and different responsibilities associated with household energy use, cooking and heating, especially in rural areas. This situation not only results in adverse health effects from indoor exposure to dirty fuels but also places disproportionately high time pressure on women. Women spend more time managing energy resources within the family, thereby constraining their opportunities for education, self-development, and engagement in social or income-generating activities.

Thus, improving access to clean energy for vulnerable populations, especially rural women, plays an important role in expanding their economic and social opportunities and contributes to the achievement of SDG 7, which aims to ensure universal access to affordable, reliable, sustainable and modern energy for everyone.

Besides, women and men use energy differently and respond to incentives to conserve energy. For example, studies have shown that in Europe, single men directly and indirectly use 22 percent more energy than single women, and women are more receptive than men to energy saving efforts and more willing to change their daily behavior to save energy<sup>1</sup>.

Moreover, mainstreaming gender into energy policies can lead to more sustainable and effective changes. Involving women in the design and implementation of energy policies helps develop more inclusive solutions by better taking into account the perspectives, experiences and needs of vulnerable groups. Research shows that women's participation in national decision-making leads to stronger action on climate change and emissions reductions<sup>2</sup>.

Finally, addressing energy vulnerability from a gender perspective contributes to the overall well-being and sustainable development of a country (Figure 1). Reliable access to clean, affordable energy reduces negative health effects from indoor pollution for women, increases productivity, improves their educational attainment, reduces gender-based violence, and enhances their contribution to the economy and society<sup>3</sup>. Inequalities in decision-making rights and access to resources also hamper the ability to fully benefit from energy

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<sup>1</sup> International Energy Agency, [www.iea.org](http://www.iea.org)

<sup>2</sup> Mavisakalyan, Astghik and Yashar Tarverdi . "Gender and climate change: Do female parliamentarians make a

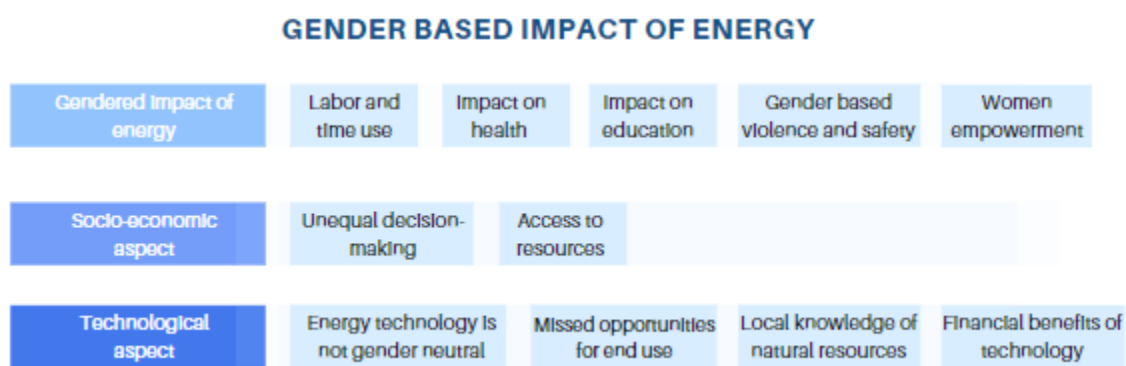
difference?" *European Journal of Political Economy* (2019): 151-164.

<sup>3</sup> World Health Organization. "Burning opportunity: clean household energy for health, sustainable development, and wellbeing of women and children." (2016).

use<sup>4</sup>. Moreover, the introduction of new technologies is not gender-neutral; it often overlooks women's needs and preferences<sup>5</sup>. Involving women in energy projects can yield financial benefits, reduce turnover and better align with community needs<sup>6</sup>. Given that women in many low- and middle-income countries primarily manage daily energy decisions in their households<sup>7</sup>, their involvement across the energy value chain can increase both the scale and quality of sustainable energy initiatives. Thus, mainstreaming a gender perspective when analyzing and addressing energy vulnerability in the Kyrgyz Republic is not only a matter of social justice, but also a strategic approach to achieving sustainable development and improving the well-being of all citizens.

This report examines the barriers and challenges women face in various areas related to energy in the Kyrgyz Republic, from access to reliable and clean energy and energy poverty to participation in energy decision-making processes. Key gender gaps in access to energy are identified based on a comprehensive analysis of existing policies and initiatives, quantitative and qualitative data. Based on the analysis, recommendations and ideas are developed to integrate gender issues into energy planning and policy implementation.

Figure 1. The importance of gender mainstreaming in the energy sector



Source : Adapted from Basnet (2020), [https://energypedia.info/wiki/Gender Mainstreaming in Energy - Need](https://energypedia.info/wiki/Gender_Mainstreaming_in_Energy_-_Need)

This analytical report was prepared as part of the National Human Development Report (NDHR) on the topic of energy vulnerability in the Kyrgyz Republic. The NHDR aims to explore the relationship between the human development of a country's citizens and issues such as energy availability, energy poverty, energy vulnerability, energy security and others, with a deep dive into the possibilities of a just energy transition consistent with the priorities of

national strategies and international commitments in the field of change climate.

<sup>4</sup> Clancy, Joy S., et al. "Gender equity in access to and benefits from modern energy and improved energy technologies: world development report background paper." (2012).

<sup>5</sup> Strengers, Yolande Amy Adeline, et al. "Energy, emerging technologies and gender in homes." *Buildings and Cities* 3.1 (2022): 842-853

<sup>6</sup> Angelou, Nicolina, and Sanjukta Roy. "Integrating Gender and Social Dimensions into Energy Interventions in Afghanistan." *The World Bank Policy Brief* (2019).

<sup>7</sup> OECD. *Gender and the Environment Building Evidence and Policies to Achieve the SDGs*. OECD, 2021.

The objectives of this study include:

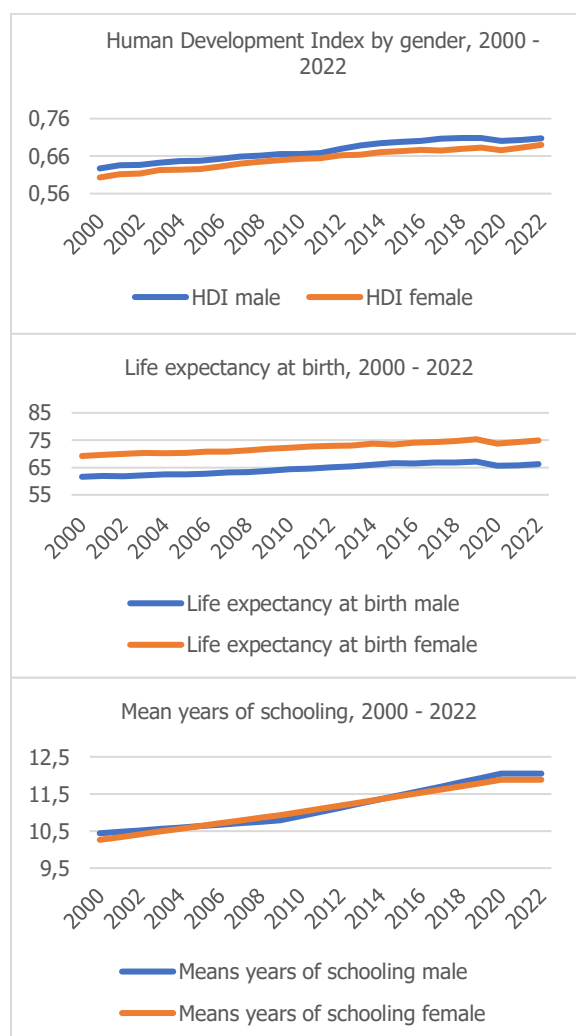
- Review and analysis of gender gaps in the energy sector, and assessment of their impact on energy access at national and local levels, including review and analysis of gender gaps in key national energy legislation, gender aspects of employment, entrepreneurship and education, and women participation in decision making and strategic planning in the energy sector.
- Review and analysis of gender gaps in energy access, including gender roles in energy use, barriers to accessing reliable energy services, difficulties in paying utility bills and coping mechanisms, and the negative impact of dirty fuels on women and children, including their health.
- Brief overview of existing initiatives/projects aimed at addressing gender issues in the energy sector in the Kyrgyz Republic and Central Asia.

## 2. Overview of the Gender Landscape in the country

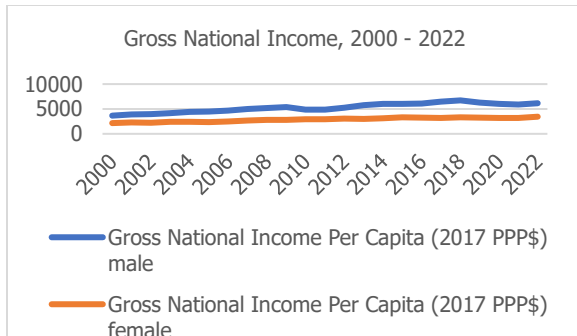
Kyrgyzstan is categorized as a country with a high level of human development, ranking 117th out of 193 countries and territories on the Human Development Index (HDI)<sup>8</sup>. The national HDI shows an upward trend, mainly due to increased gross national income per capita and advancements in life expectancy. However, despite the overall progress in human development nationwide, the gender gap in human development achievement continues to persist. The HDI for women in Kyrgyzstan is 25 percent lower than that for men in 2022, with the disparity being particularly pronounced in terms of GNI per capita, where men's GNI is 79.3 percent higher than women's. The gender gap in HDI reduced in 2004-2011, but began to increase again in 2011-2020 (Figure 2). Since 2020, the gender gap in the HDI has been gradually narrowing, largely due to the decreasing gender gap in income and a faster growth rate of life expectancy at birth for women. Specifically, GNI per capita for women increased by 6.99 percent, compared to a 4.31 percent increase for men, and the increase in life expectancy for women (0.58 years) exceeded that for men (0.42 years).

Additionally, there are negative trends concerning the gender gap in education. Between 2005 and 2014, women outperformed men in average years of schooling, but since 2015, women's average years of schooling have once again fallen behind men's.

Figure 2. Human Development Index and its components by gender, 2000 - 2022



<sup>8</sup> UNDP (United Nations Development Program ). 2024. Human Development Report 2023-24: Breaking the gridlock: Reimagining cooperation in a polarized world. New York

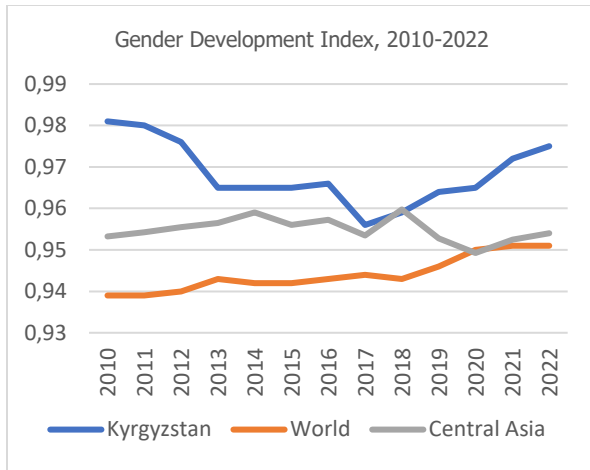


Source: UNDP HDRO

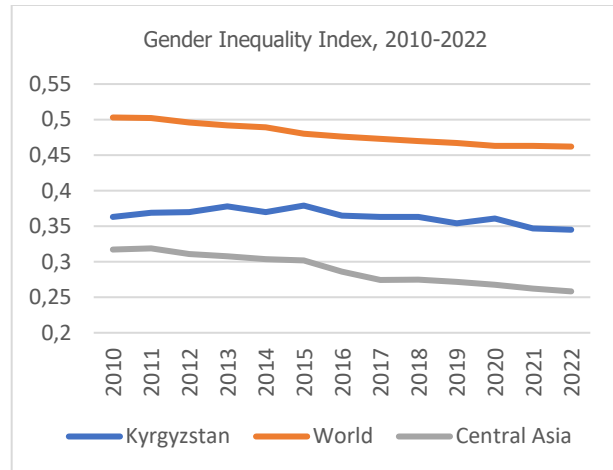
Republic are also reflected in the Gender Development Index (GDI) and Gender Inequality Index (GII). The Gender Development Index (GDI) shows the ratio of women's HDI to men's HDI and measures gender inequality in the achievement of key aspects of human development such as health, education and living standards. Although Kyrgyzstan's GDI indicators in 2022 are higher than the regional and global averages and have improved (indicating reduced gender inequality) since 2017, the current value of GDI is still lower than in 2010. Overall, the dynamics of GDI growth in the country have been highly volatile (Figure 3).

Existing gender disparities in human development achievements in the Kyrgyz

Figure 3. Gender Development Index and Gender Inequality Index



Source: UNDP HDRO



The Gender Inequality Index (GII) measures gender inequality in three dimensions: reproductive health (maternal mortality rate and teenage birth rate), empowerment (proportion of parliamentary seats held by each gender, and levels of secondary and tertiary education) and the labor market (participation of women and men in the labor force). The GII ranges from 0 to 1, with a higher index indicating that gains in human development are unequal between women and men. Although the Kyrgyz Republic performs better than the global average, gender inequality, as measured by the GII, is higher in the country than in all other Central Asian nations. Moreover, the GII reduction rates have

been stagnating, with gender inequality in the country decreasing more slowly over the past decade than in neighboring countries. For instance, in 2010, Kyrgyzstan's GII (0.363) was lower than Tajikistan's (0.369), while both were significantly behind Kazakhstan (0.266) and Uzbekistan (0.283). By 2022, Tajikistan (0.269) had surpassed Kyrgyzstan (0.345) in GII indicators, approaching Uzbekistan (0.242). From 2010 to 2022, Kyrgyzstan managed to reduce its GII indicators by only 5 percent, whereas Kazakhstan reduced its indicators by 33 percent, Tajikistan by 27 percent, and Uzbekistan by 11 percent. This disparity is primarily due to an increase in women's

parliamentary representation in neighboring countries, contrasted with a decrease in Kyrgyzstan. Additionally, other Central Asian countries have seen higher growth rates in women's economic activity comparing to Kyrgyzstan.

In general, the fluctuating growth of the Gender Development Index, combined with Kyrgyzstan's significant lag behind other Central Asian countries in reducing the Gender Inequality Index, is cause for concern. Despite overall progress in human development across the country, the gender gap in human development achievements persists.

# 3. Data and methodology

The methodology used in this report is a mixed-methods approach, including desk research of national legislation and strategic documents in the energy sector, desk research of existing programs and initiatives, in-depth interviews with industry representatives, analysis of statistical information from the National Statistical Committee (NSC KR), including data from Kyrgyz integrated household survey (KIHS)

of the NSC, as well as a survey of households in residential areas around the cities of Bishkek and Jalal-Abad, conducted by UNDP in January-March 2024 as part of the NHDR preparation process. Detailed information about the analysis methodology for each section of the analytical report is presented in Table 1.

*Table 1. Methodology for analysis on gender and energy*

<b>Chapter</b>	<b>Methodology</b>
Gender differences in the energy sector	Desk research, interviews, statistical analysis
Gender gaps in key national energy legislation	Desk research of legislative documents; consultations with industry representatives
Gender aspects of education, employment and entrepreneurship in the energy sector;	Statistical analysis of NSC data; desk research of reports and analytical articles; in-depth interviews with industry representatives
Gender aspects of women's participation in decision-making and strategic planning in the energy sector	In-depth interviews with industry representatives; desk research of other available data and reports
Gender Impact of Energy Infrastructure	Desk research of reports and analytical articles; c statistical analysis of NSC data
Gender gaps in access to energy	Statistical analysis of household survey data as part of the preparation of the NHDR
Review of existing initiatives/projects aimed at addressing gender issues in the energy sector in the Kyrgyz Republic and Central Asia	Desk research

The analysis of gender issues in the energy sector from the supply side was made through desk research, statistical analysis, and in-depth qualitative interviews with representatives of the sector. In-depth interviews were conducted with entrepreneurs working in the field of renewable energy sources, representatives of women's associations, educational institutions, as well as with women with experience as dispatchers and managers of regional power plants.

The analysis of gender differences in access to energy at the household level is based mainly on data from a household survey of residential areas conducted by UNDP in January-March 2024 as part of the NHDR preparation process, including 1,051 households in Bishkek/Chui region and Jalal-Abad region.

## 4. Gender gaps in the energy sector

This section of the report provides an overview and analysis of gender gaps in the energy sector in the Kyrgyz Republic (KR) from the supply side and assesses their impact on access to energy at national, local, urban, and rural levels. It includes a gender analysis of national legislation, employment, entrepreneurship and education, decision-making and strategic planning, and infrastructure impacts.

### 4.1. Gender gaps in key national legislation and supranational energy strategies and plans

In the following section, key regulatory and legal acts related to gender issues in the Kyrgyz Republic will be discussed first, providing a comprehensive overview of the country's general approach to gender equality. This will be followed by an examination of the laws, acts, strategies, and plans specific to the energy sector to assess whether they adequately address gender issues present in the sector.

#### 4.1.1. Regulatory and legal acts in the field of gender issues

Over the years of independence, Kyrgyzstan has acceded to a number of international conventions, including the Convention on the Elimination of All Forms of Discrimination against Women<sup>9</sup>. Gender equality is an integral part of human rights and freedoms provided for by the Constitution of the Kyrgyz Republic.

The legislative basis for implementing gender equality policies is the Law of the Kyrgyz Republic "On State Guarantees of Equal Rights and Equal Opportunities for Men and Women"<sup>10</sup>, updated in 2008. This law emphasizes the

necessity of incorporating gender approaches into key strategic documents and action plans as a crucial condition for effectively promoting substantive equality. However, despite the law's requirement for gender analysis of all adopted legal acts in the country, this process is often merely formal, with laws being enacted following only superficial scrutiny of gender considerations<sup>11</sup>.

The advancement of gender issues in the country is facilitated through the adoption of national programs and action plans. On September 16, 2022, the National Strategy of the Kyrgyz Republic to achieve gender equality until 2030<sup>12</sup> was adopted. This Strategy acknowledges that **despite certain progress in developing national legislation and programs to support gender equality in the country, the practical implementation of these initiatives remains challenging.**

The National Strategy for achieving gender equality was developed using contemporary approaches, including adaptive leadership, positive deviance, and scenario planning following the Oxford methodology. It outlines the following priority areas and tasks of national gender policy:

- 1) expanding economic opportunities for women;
- 2) cultural policy and functional education;
- 3) strengthening protection against gender discrimination and ensuring fair justice;
- 4) promoting gender parity in decision-making and enhancing women's political participation;
- 5) regulatory policy.

To achieve the goals outlined in each area, a National Action Plan (NAP) for 2022-2024<sup>13</sup> was

<sup>9</sup> <https://cbd.minjust.gov.kg/90054/edition/1265349/ru>

<sup>10</sup> <https://cbd.minjust.gov.kg/4-3827/edition/382698/ru>

<sup>11</sup>National strategy of the Kyrgyz Republic to achieve gender equality until 2030 (to the Resolution of the Cabinet of Ministers of the Kyrgyz Republic dated September 16, 2022 No. 513)

<sup>12</sup> <https://cbd.minjust.gov.kg/66-46/edition/1189691/ru>

<sup>13</sup> <https://cbd.minjust.gov.kg/44-93/edition/1189689/ru>

formulated under the strategy's framework. Most of the NAP actions encompass nationwide initiatives without industry-specific focus, but there are few measures directly related to energy:

- **Expanding Economic Opportunities for Women:** Introduce quotas for women students in energy engineering education and provide preferential loans for women-led energy efficiency projects.
- **Enhancing Climate Change Adaptation with Gender Focus:** Incorporate gender considerations into climate adaptation policies, conduct gender analyses of national and sectoral adaptation strategies, and build capacity among women local council members.
- **Improving Gender Statistics and Indicators:** Update gender-sensitive metrics in the Climate Change Roadmap, and enhance the

collection and analysis of gender-disaggregated data in entrepreneurship and financial inclusion. The National Strategy for Achieving Gender Equality until 2030 and the NAP for 2022-2024 are comprehensive documents that set out goals not only to promote cultural norms supportive of gender equality but also to integrate a gender perspective into budget planning at governmental and local levels. These initiatives emphasize enhancing the institutional framework, with specific measures in the energy sector limited, as all sectoral regulations are expected to undergo gender analysis before adoption. Furthermore, the focus is predominantly on broad, cross-sectoral initiatives aimed at mutual reinforcement and cultural norm change rather than sector-specific approaches to addressing gender issues.

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## THE IMPORTANCE OF GENDER ANALYSIS AND TYPES OF POLICIES FROM A GENDER PERSPECTIVE

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Gender analysis challenges the assumption that policies, programs, and legislation affect everyone equally, regardless of gender, which is characteristic of gender-neutral policies. Such policies overlook the distinct physical, social, economic characteristics, and life experiences of women and men, including specific groups like rural women and people with disabilities. On the other hand, true equality involves ensuring that all individuals, regardless of gender, have equitable access to the positive outcomes of policies.

Gender analysis entails systematically evaluating the distribution of roles, power, control over resources, and capabilities between men and women, as well as the allocation of responsibilities. Its objective is to identify the differing impacts that policies and programs typically have on men and women, as well as on gender relations. The findings of gender assessments should be formally integrated into policies and administrative procedures at both formal and institutional levels.

### Types of policies from a gender perspective

**Gender biased policy:** The policy that explicitly discriminates against either women or men based on gender.

**Gender-blind policy:** The policy where different roles, responsibilities, capabilities, needs and priorities of women and men are ignored, which can potentially result in unintended disparities or inequalities. Gender-blind policies are based on information derived from men's activities and/or assume those affected by the policy have the same (men) needs and interests.

**Gender-neutral policy:** The policy that formally embodies the principle of gender equality, but its practical implementation has no differential positive impact in terms of gender equality and can sometimes inadvertently undermine women's status.

**Gender-sensitive policy:** Policy that recognizes the differing needs, experiences, and roles of individuals based on their gender. They aim to comprehensively analyze the underlying factors shaping gender roles and to foster women-oriented approaches that promote greater equality of opportunities, rights, and responsibilities between men and women.

At the same time, the NAP budget for 2022-2024, under the National Strategy for Achieving Gender Equality, relies heavily on external donor funding, with the state budget providing minimal financial support. Approximately 87 percent of the NAP budget is allocated for implementation through international donor resources, suggesting potential limitations in government commitment and competing priority areas for national policy-making.

### *3.1.2. Strategies and plans of supranational organizations and participation of the Kyrgyz Republic in international agreements*

#### **In the area of gender issues in the Kyrgyz Republic, international organizations and the strategies they implement in collaboration with government bodies and other stakeholders have a crucial role.**

The pivotal gender document is the Gender Equality Strategy 2022-2025 by the United Nations Development Program (UNDP)<sup>14</sup>. This strategy acknowledges global challenges in achieving gender equality, advocating for structural reforms, inclusivity, and resilience across six key priority areas, prominently featuring energy and gender equality. Key enablers for achieving the strategy's objectives include development financing, digitalization, and strategic innovation<sup>15</sup>.

The Kyrgyz Republic's Nationally Determined Contribution<sup>16</sup> (NDC) under the Paris Agreement, updated in 2021, outlines the country's strategy to combat climate change and reduce greenhouse gas emissions globally. Developed with the involvement of various government bodies and international organizations, and coordinated by the State Committee on Ecology and Climate with UNDP support, the NDC focuses on achieving a low-carbon transformation by 2030 aligned with national priorities and Sustainable Development Goals. Key to achieving its targets are mitigation

measures across five sectors, including energy, with a specific section dedicated to integrating gender perspectives. This involves enhancing adaptive capacity through gender-sensitive adaptation measures, improving statistical data collection, and developing policies and research in the energy sector.

### *3.1.3. Regulatory acts in the energy sector*

#### *The legislative framework:*

The primary regulatory acts governing the energy sector in the Kyrgyz Republic include the Law "On Energy"<sup>17</sup> (1996, last amended 2015), the Law "On Electric Power Industry"<sup>18</sup> (1997, last amended 2023), the Law "On Energy Saving"<sup>19</sup> (1998, last amended 2019), the Law "On Renewable Energy Sources"<sup>20</sup> (2022, amended 2023), and the Law "On Energy Efficiency of Buildings"<sup>21</sup> (2011, last amended 2019). These laws establish the legal, organizational, and economic frameworks for energy operations and the regulation of state-industry relations.

All of these **regulatory acts in the energy sector are gender-blind**, and they do not acknowledge or address gender issues or inclusivity within any of their provisions.

#### *Strategic base*

*National Strategy:* The National Development Strategy of the Kyrgyz Republic for 2018-2040<sup>22</sup> outlines the country's long-term development goals, while the National Development Program of the Kyrgyz Republic until 2026<sup>23</sup> identifies key priorities across the public administration system. These documents highlight energy, particularly hydropower, as a strategic priority sector crucial for improving living standards and driving economic growth across all sectors. Regarding gender equality, the Strategy sets a goal for Kyrgyzstan to achieve by 2040: "ensuring full and equal participation of women in leadership at all levels of decision-making in political, economic, and public life." Government

<sup>14</sup> <https://genderequalitystrategy.undp.org/>

<sup>15</sup>United Nations Development Program (UNDP) Gender Equality Strategy 2022-2025. <https://www.undp.org/sites/g/files/zskgke326/files/2021-09/UNDP-Strategic-Plan-2022-2025-RU.pdf>

<sup>16</sup> <https://kyrgyzstan.un.org/sites/default/files/2021-12/%D0%9E%D0%9D%D0%A3%D0%92%20%D0%A0%D0%A3%D0%A1%20%D0%BE%D1%82%2008102021.pdf>

<sup>17</sup> <https://cbd.minjust.gov.kg/663/edition/1127227/ru>

<sup>18</sup> <https://cbd.minjust.gov.kg/4-477/edition/1268359/ru>

<sup>19</sup> <https://cbd.minjust.gov.kg/96/edition/956638/ru>

<sup>20</sup> <https://cbd.minjust.gov.kg/112382/edition/1279296/ru>

<sup>21</sup> <https://cbd.minjust.gov.kg/4-4415/edition/954101/ru>

<sup>22</sup>

<https://mineconom.gov.kg/froala/uploads/file/7ec5fa875f2dc ee2aa785af041a6976f096c0295.pdf>

<sup>23</sup> <https://cbd.minjust.gov.kg/430700/edition/1096469/ru>

programs are actively pursuing this goal to promote gender equality and address disparities between men's and women's opportunities. However, sections of the strategy focused on energy and public administration do not address gender equality or women's specific roles. Additionally, the **Strategy** emphasizes equal civil rights regardless of factors such as religion, ethnicity, citizenship, and occupation, but **does not include gender as one of these considerations**.

*Industry strategy:* The main national legislative document that sets the strategic foundation for energy development in Kyrgyzstan is the National Energy Program (NEP). Currently, a draft NEP until 2035 has been formulated, but it awaits approval by the Government. The NEP serves as a critical policy document outlining the goals, objectives, and primary directions of the country's medium- and long-term energy policy. It also establishes mechanisms for implementing these policies to guide the development and management of the energy sector in the Kyrgyz Republic.

The draft NEP for the period until 2035 represents a notable shift compared to the previous NEP for 2008-2010 and the Fuel and Energy Complex Development Strategy until 2025 by incorporating gender aspects into the development of the energy sector. Unlike the previous NEP, which was gender-blind and did not address the specific roles or impacts on women, the **draft NEP for 2035 explicitly discusses gender issues**. It highlights the impact of air pollution-related diseases on women and emphasizes the role of renewable energy sources (RES) and climate change adaptation. For instance, it acknowledges that transitioning from coal to natural gas and renewable energy sources for heating and cooking can contribute to reducing women's health risks.

Despite research indicating that gender issues are pertinent across electricity tariff policy, energy education, entrepreneurship, employment, and decision-making within the energy sector, these areas remain gender neutral within the NEP project. **The only**

**segments of the NEP that address gender-specific considerations are those related to renewable energy sources and adaptation to climate change.** Specifically, the development of projects in solar energy, wind energy, and geothermal energy under the RES block is intended to integrate gender aspects and cater to the needs of vulnerable groups. Furthermore, the NEP suggests that policies and legislation in energy sector development for climate adaptation should incorporate gender perspectives and the interests of vulnerable populations.

Given the substantial gender segregation in education, employment, and decision-making within the industry, it is imperative to incorporate specific measures aimed at achieving gender equality into the draft NEP. This should particularly focus on enhancing institutional reforms and fostering innovative development within the energy sector, which includes bolstering scientific and human resources capabilities within the industry.

*Government programs and action plans:*

**Previous state programs in energy** such as the Program for Energy Saving and Energy Efficiency Policy Planning in the Kyrgyz Republic for 2015-2017, the Program for the Development of Small and Medium Energy until 2012, and the Medium-Term Strategy for the Electricity Sector for 2012-2017 have been **gender blind**. They do not acknowledge gender issues or include tasks aimed at addressing gender-related challenges within the sector.

The Program "Implementation of energy saving and energy efficiency policy in the Kyrgyz Republic for 2023-2027"<sup>24</sup> identifies priority issues and tasks aimed at enhancing the efficient use of energy resources. These include improving energy efficiency in extraction, production, and consumption of all types of fuel and energy resources, as well as promoting the use of cleaner energy sources. However, **the Program and its Action Plan are gender blind**, lacking specific focus on gender aspects within energy saving and efficiency policies, and do not incorporate targeted measures for women or other vulnerable groups.

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<sup>24</sup> <https://cbd.minjust.gov.kg/53-327/edition/1264523/ru>

## **The Green Economy Development Program 2019-2023**<sup>25</sup> acknowledges the

interconnectedness of gender and poverty, emphasizing that transitioning to a green economy involves addressing these intertwined barriers to social change. It recognizes that men and women assume different gender roles and responsibilities, and face unequal access to resources and decision-making processes.

Despite acknowledging these gender-specific issues in its overview, the **Program is gender-neutral** as it lacks specific measures aimed at addressing identified gender gaps and issues within its specific tasks. Initiatives targeting women primarily focus on gender-sensitive information campaigns rather than improving women's access to energy or making energy policies more gender-sensitive.

The Program for the support and development of women's entrepreneurship in the Kyrgyz Republic for 2022-2026<sup>26</sup> does not include specific measures tailored to industries, including the energy sector. The largest allocation in the program's budget is designated for the collection and analysis of gender-disaggregated statistics related to financial inclusion. The primary objectives of the Program include enhancing access to finance and financial products, facilitated through initiatives such as the Guarantee Fund and preferential financing for women entrepreneurs, supported by 35.5 million soms from the ADB, albeit without specifying the sectors targeted for funding.

## **Conclusions**

While national legislation in the Kyrgyz Republic does not overtly hinder women's participation across various domains, including the energy sector, there remains significant inadequacy in integrating gender perspectives into national strategies, sectoral policies, and program implementation. Despite mandatory gender assessments for all legal acts prior to adoption, practical outcomes often fall short, with many initiatives remaining largely declarative. Key legislative frameworks like the National Strategy for achieving gender equality until 2030 and the NAP for 2022-2024 indicate minimal state

budget allocations for their implementation, relying heavily (87 percent of the NAP budget) on international donor support. This reliance underscores a prioritization of other development areas over gender equality, highlighting the ongoing challenges in effectively addressing gender disparities within national policy frameworks.

The National Development Strategy of the Kyrgyz Republic for 2018-2040 envisions achieving full and equal participation of women in all levels of decision-making by 2040. However, the strategy's expected outcomes emphasize equal civil rights irrespective of factors like religion, ethnicity, citizenship, and life activity, with gender or sex not explicitly included in these considerations.

Regarding industry regulations, the draft National Energy Program (NEP) for the period until 2035 represents a step forward compared to its predecessor from 2008-2010 by incorporating gender aspects into discussions on issues such as diseases related to air pollution and the development of renewable energy sources for climate adaptation. Despite evidence highlighting gender disparities in electricity tariff policies, energy education, entrepreneurship, employment, and decision-making within the energy sector, these aspects remain gender neutral in the current NEP draft.

The previous National Energy Program for 2008-2010, the Strategy for the Development of the Fuel and Energy Complex until 2025, and other government programs related to the energy sector have been predominantly gender blind. They have not been addressing the specific roles of women or acknowledge the unique barriers and challenges they face, and ignoring gender implications in the energy sector.

<sup>25</sup> <https://cbd.minjust.gov.kg/453438/edition/1189681/ru>

<sup>26</sup> <https://cbd.minjust.gov.kg/53-309/edition/1117600/ru>

## Recommendations:

- The approach to energy legislation and the strategic program development must transition from gender-neutral to gender-sensitive or gender-transformative. This includes explicit mentioning women's participation and their roles as energy users, energy managers, and drivers of the energy transition.
- Improve mechanisms for gender analysis of legislative and regulatory acts to ensure they are comprehensive and not merely formal. This includes increasing the capacity of Jogorku Kenesh staff responsible for gender analysis, or allocating funds to conduct expertise by independent experts. It is also necessary to improve the procedures for gender analysis and the subsequent adoption of acts, for example, ensuring sufficient time for public discussions and adherence to publication timelines.
- Sectoral strategies and development plans need to include special measures to achieve gender equality in the energy sector. This includes developing and implementing activities to reduce gender segregation in education, employment and entrepreneurship in the energy sector, increasing women's economic opportunities through improved access to energy resources and decision-making at local and national levels, and enhancing gender-sensitive adaptation to climate change aspects.
- Avoid relying solely on external sources of funding for gender programs and activities. Government ownership and commitment are crucial for effectively addressing gender issues and ensuring sustained interaction with local stakeholders.

## 4.2. Gender aspects of education, employment and entrepreneurship in the energy sector

In February 2024, Kyrgyzstan ratified the 190th Convention of the International Labor Organization on the Elimination of Violence and Harassment in the World of Work<sup>27</sup>. Subsequently, on March 7, 2024, the President of the Kyrgyz Republic approved the Program to Support Women's Leadership until 2030<sup>28</sup>. Despite these advancements, the country still maintains a list of professions legally prohibited for women, significantly limiting their professional opportunities and hindering the achievement of gender equality. Furthermore, there is substantial gender segregation in energy education, employment, and entrepreneurship within the energy sector.

### 4.2.1. Education

While women constituted 57 percent of all students in secondary vocational education (colleges and technical schools) at the beginning of the 2022/2023 academic year, only 3.26 percent of those studying in the specialty of "Energy" were women. This represents a downward trend from 2018/2019, when 4.25 percent of energy engineering students were women, indicating a decline of nearly 25 percent over three years<sup>29</sup>.

This gender segregation is also evident in higher education institutions. Although women made up 52 percent of university students at the beginning of the 2022/2023 academic year, only 5.7 percent of those studying energy and electrical power engineering were women. Overall, **energy is in top three of the most gender-segregated fields**, second only to Geology, Mineral Exploration and Development, and Military Education.

Among the main reasons for high gender segregation in education are the following:

- Social norms and persistent stereotypes about "men" and "women" professions and specialties influence the perception of energy as more suitable for boys and, therefore,

<sup>27</sup> <https://cbd.minjust.gov.kg/4-5323/edition/6070/ru>

<sup>28</sup> <https://cbd.minjust.gov.kg/53-343/edition/3923/ru>

<sup>29</sup>NSC KR. Number of students in secondary vocational education organizations by gender.

less encouraged or promoted among girls from an early age by parents and society.

- Professional and gender stereotypes also result in lower chances of employment for women<sup>30</sup>, which makes the energy profession less attractive for girls and their families.
- Men dominance in the industry may lead to gender bias in educational institutions, affecting how energy engineering subjects are taught and perceived. Overt or hidden biases on the part of teachers or peers can negatively impact the motivation of women students and applicants to pursue an energy education and subsequent employment in the industry.
- The lack of role models among women engineers and energy workers, due to low representation in the energy sector, especially among managers, further discourages women from entering the field and getting energy education.

Due to significant gender segregation not only in the energy sector but also in technical specialties in general, recent years have seen the active implementation of various mentoring programs and the promotion of STEM specialties among girls. Initiatives by organizations such as UNICEF, UNDP, the Soros Foundation-Kyrgyzstan, and the Roza Otunbaeva Initiative aim to increase the representation of women in technical professions and industries, including the energy sector.

#### **4.2.2. Employment**

**The labor market has seen a decline in women's economic activity and employment levels.** Men exhibit significantly higher employment rates across all age groups, particularly noticeable among women aged 25-34, a period coinciding with peak childbearing years for women. At the same time, those women who work, on average, have higher levels of education compared to men.

<sup>30</sup> <https://www.osce.org/occea/515637>

<sup>31</sup>The "motherhood penalty" is the worse position of women with children in the labor market compared to childless women, which can manifest itself through reduced access to employment (in general or to jobs at a certain level), deterioration in conditions for career advancement, or through lower wages. .

**There exists a significant gender disparity not only in employment rates but also in the amount of time spent on paid work.** On average, women work 5.1 hours less per week than men, while dedicating nearly five times more time to household chores (averaging 4 hours and 20 minutes per day). Women are also disproportionately represented in lower-paying social sector jobs compared to men, contributing to the gender wage gap and overall income disparities even among the employed. Additionally, women often face career interruptions due to maternity leave and encounter discrimination related to pregnancy and childcare responsibilities, resulting in what is known as the<sup>31</sup>, which can reduce a woman's potential wages by up to 40 percent in less developed countries<sup>32</sup>. Women's low levels of employment, less time spent in paid work, and lower incomes contribute to higher risks of poverty among women and increase their vulnerability to economic shocks and crises.

**The energy sector also exhibits gender gaps in employment and pay.** In 2022, women constituted only 38.6 percent of the employed population, with a particularly low representation in sectors involving electricity, gas, steam, and air conditioning, at just 17.3 percent or 6.1 thousand individuals (Figure 4). According to the NSC KR, the majority of these women hold administrative positions. Between 2004 and 2018, there was a significant decline in women participation in the industry, followed by a gradual increase since 2018.

**Women not only participate less in the industry's workforce but are also underrepresented in leadership roles.** Specifically, only 27 percent of managers in enterprises engaged in providing electricity, gas, and steam are women, with the majority employed in the private sector<sup>33</sup>.

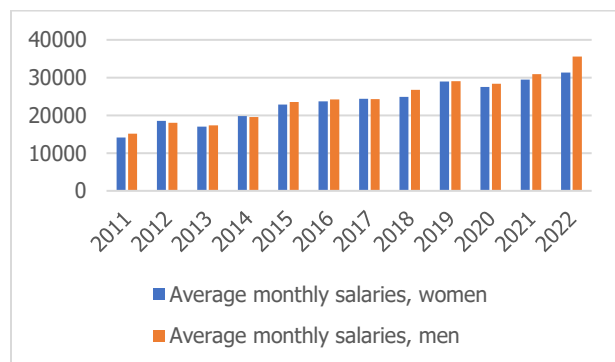
<sup>32</sup> Grimshaw, Damian, and Jill Rubery. "The motherhood pay gap." *Geneva : International Labor Organization* 57.1 (2015): 1-69.

<sup>33</sup> National Statistical Committee of the Kyrgyz Republic, *Gender statistics*, accessed May 15, 2024, <http://stat.gov.kg>.

Figure 4. Share of women among the employed population and in the energy sector, 2002 - 2022



Figure 5. Average wages of women and men in the energy sector, 2011-2022

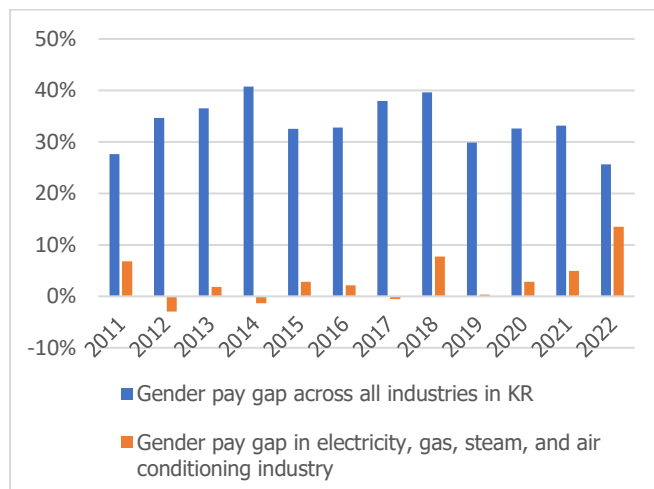


Source: based on data from the NSC KR

The gender pay gap in the industry is 13.5 percent, which is lower than the national average of 25.6 percent. In 2022, women earned on average 24,954 som per month, which is 26 percent lower than the salary of men. Specifically, within the electricity, gas, steam, and air conditioning sectors, women earned an average of 31,300 som per month, 14 percent less than their men counterparts in the same industry (Figure 5). The low share of women in leadership positions in the sector contributes to the disparity in wages. Notably, the gender wage gap in the industry has been widening in recent years, particularly since 2020 (Figure 6).

<sup>34</sup>OSCE (2024). Towards a just energy transition in Central Asia. The key role of women in energy <https://www.osce.org/files/f/documents/9/c/565519.pdf>

Figure 6. Gender pay gap in the energy sector, 2011-2022



Source: based on data from the NSC KR

Gender gaps in the energy sector's employment and wages can be explained by several factors<sup>34, 35</sup>:

- **Educational disparities:** Limited access for women to technical and energy-related education and training due to gender-segregated educational pathways.
- **Gender stereotypes and gender discrimination:** Persistent societal beliefs about gender roles that influence hiring practices, career advancement opportunities, and participation in professional development programs
- **Workplace discrimination:** Direct and indirect biases and discriminatory practices within organizations that disadvantage women in recruitment, promotion, and compensation.
- **Lack of gender diversity initiatives:** Absence of targeted policies such as hiring quotas or diversity programs aimed at increasing women representation at all levels of the workforce.
- **Challenges in work environment:** Issues such as workplace isolation, lack of support networks, and inadequate facilities for women due to the dominance of men among staff.

<sup>35</sup>Interview with a representative of the Association of Women in Energy

- *Social norms and family and caregiving responsibilities:* Traditional expectations regarding women's roles in caregiving and doing household chores, which can limit their availability for certain work positions in the sector requiring flexible schedules, travel, or extensive hours.
- *Work-life balance:* Difficulties in balancing career demands with familial responsibilities, particularly during critical life stages such as childbirth and child-rearing.
- *Childcare accessibility:* Insufficient availability of affordable and quality childcare options, which can hinder women's full participation in the workforce.
- *Internalized biases:* Women's own internalized beliefs about suitable careers and opportunities, influenced by societal norms and family expectations.
- *Awareness and confidence:* Limited awareness among women about career opportunities in the energy sector and lower confidence in pursuing such paths.

#### **4.2.3. Entrepreneurship**

Women constitute approximately 23 percent of self-employed individuals and 16.6 percent of entrepreneurs with employees. Although the number of women entrepreneurs grew annually from 2010 to 2020, **there has been a decline in the proportion of women among the self-employed and entrepreneurs with employees since 2020.**

Women entrepreneurs also face additional challenges and inequalities when running a business. Surveys indicate that women encounter issues with tax authorities and sanitary epidemiological services nearly twice as often as men, and they face challenges with authorities and organizations in the energy sector 1.5 times more frequently<sup>36</sup>. Moreover, women often have limited access to credit due to the prevalent registration of assets and property under men's names in the country.<sup>37</sup> Microfinance organizations are a primary source

<sup>36</sup>Program for the support and development of women's entrepreneurship in the Kyrgyz Republic for 2022 - 2026

<sup>37</sup>National strategy of the Kyrgyz Republic to achieve gender equality until 2030 (to the resolution of the Cabinet Ministers Kyrgyz Republic dated September 16 , 2022 No. 513)

of lending for women entrepreneurs, offering easier application processes but loans that are typically smaller in amount and come with higher interest rates. As a result, women's entrepreneurial activities tend to be confined to small businesses with limited start-up capital, few employees, and constrained opportunities for business expansion<sup>38</sup>.

Interviews with sector representatives have highlighted that **women entrepreneurs in the energy sector primarily engage in renewable energy ventures.** However, due to the absence of gender-disaggregated data specifically on entrepreneurs within the industry, a comprehensive assessment of gender dynamics in energy entrepreneurship remains challenging. Nevertheless, insights from sector representatives suggest that while gender segregation persists in the energy sector, it is less pronounced in entrepreneurship compared to education and employment within state enterprises. Notably, none of the state enterprises in the energy sector have women in managerial, directorial, or deputy managerial roles. In contrast, several industry business associations and public foundations are led by women, including the Association of Renewable Energy in Kyrgyzstan, the Association of Green Power Plants of Renewable Energy of the Kyrgyz Republic, the Association of Small Hydroelectric Power Plants, PF "Center for Development of Renewable Energy and Energy Efficiency," and Unison Group.

Women entrepreneurs in the energy sector face standard barriers that are present in the

«I have not encountered any difficulties because I am a woman. In the energy sector, as in others, I believe the key is to have a decent level of education and experience, to articulate your opinions thoughtfully, and to listen to the perspectives of other specialists, particularly those with higher qualifications.” – from an interview with an entrepreneur.

economy: limited access to financing, problems with government inspection agencies, social norms and gender stereotypes about the role of women in the family and society, lack of necessary business skills, as well as financial and legal literacy.<sup>39</sup>

**At the same time, entrepreneurship gives women in the energy industry greater flexibility and autonomy in realizing their potential and managing their careers** than employment in energy enterprises<sup>40</sup>. Interviews with entrepreneurs showed that many of them come to the energy sector from other industries and have financial, economic, and legal education. **Growing demand** from businesses and the public **for renewable energy sources**, alongside the development of off-grid systems based on renewables, **might offer women significant job opportunities across various segments of the value chain**. Many of the necessary skills for these roles can be developed locally, empowering women to take leadership roles in implementing and maintaining off-grid renewable energy systems<sup>41</sup>.

In recent years, government programs, projects of international organizations, as well as initiatives of business associations to support women's entrepreneurship have been increasingly implemented. While these programs and projects do not specifically target the energy sector, women energy entrepreneurs also benefit from such initiatives through improved access to concessional financing, educational programs, information products, mentoring programs, and expanded networks and partnerships.

In 2021, the Government of the Kyrgyz Republic adopted the "Program for the support and development of women's entrepreneurship in the Kyrgyz Republic for 2022-2026", which does not include specific measures tailored to industries, including the energy sector, and has the following priorities:

- improving legislation regulating women's business activities, reducing costs, protecting and ensuring the safety of activities, as the basis for the development of private investment activities;
- support for state and public institutions that increase the expert and analytical potential of

«Renewable energy sources (RES) play a significant role in the sphere of innovative solutions and unique approaches to problem-solving, facilitating entry and success in the industry regardless of gender. Entrepreneurship also demands swift adaptation to evolving market requirements and institutional norms, where women, often balancing work and household responsibilities, demonstrate multifunctionality and flexibility.

**Investing in women entrepreneurs is not only a matter of gender equality but also a sound business decision.** Women entrepreneurs bring unique perspectives, creativity, and problem-solving skills to the table. They frequently identify market gaps and customer needs that may have been overlooked, leading to innovative business ideas and solutions. Moreover, **this has a multiplier effect as women typically reinvest in their communities, creating employment opportunities and exerting positive social impact.**» - from an interview with woman entrepreneur.

<sup>39</sup>National strategy of the Kyrgyz Republic to achieve gender equality until 2030 (to the resolution of the Cabinet Ministers Kyrgyz Republic dated September 16, 2022 No. 513).

<sup>40</sup>Organization for Security and Co-operation in Europe (OSCE). Advancing a Just Energy Transition in Central Asia. Women's Key Role in the Energy Sector. 2024.

<sup>41</sup>UNDP. Gender balance in the renewable energy sector in Kazakhstan: status, problems and solutions. 2023.

women entrepreneurs, developing the ability to apply methods of analysis and assessment of regulatory impact;  
- providing women entrepreneurs with information, consulting, production, technological and educational services through the system of regional Women's Entrepreneurship Support Centers and business incubators.

As part of the implementation of the project "Development of Women's Entrepreneurship", implemented with funds from the Japan Fund for Poverty Reduction and administered by the ADB, preferential loans began to be issued to women entrepreneurs. In addition, preferential financial products were launched: "Ishker-Aiym" from OJSC "RSK Bank", "Aiym-Credit" from OJSC "Aiyl Bank".

Entrepreneurs are actively uniting in associations and coalitions to consolidate resources and joint actions to develop women's entrepreneurship. For example, in 2022, the Association of Women in Energy of Kyrgyzstan was formed to support women in the energy sector and improve their representation in education and employment in the industry. In 2023, a presentation of the National Agenda for Women's Entrepreneurship, developed by the Coalition for the Development of Women's Entrepreneurship and the Reduction of Gender-Based Violence "Demilgeluu Ayimdar" ("Initiative Women"), took place. The coalition unites 31 organizations from women's business associations, sectoral business associations and women entrepreneurs, representing the interests of more than 42 thousand women in the country. The Ministry of Economy and Commerce (MEC KR), in partnership with the NGO "Women's Forum "Kurak" with the support of the UNDP project "Promotion of Trade in Central Asia" and other donor projects in the regions, regularly conducts the Information Caravan "Ishker Ayimdar - Ayildan Aalamga" for women entrepreneurs.

In November 2022, a project was launched to issue gender bonds aimed at financing sustainable development projects. This initiative is being implemented in partnership with Bank

of Asia, UN Women, GFC, Kyrgyz Stock Exchange, and financial company "Senti". Bank of Asia is expected to be the first to issue these social gender bonds, which will support the business development of women entrepreneurs. Unlike traditional bonds, social bonds are targeted towards funding social projects and adhere to the principles of the International Capital Markets Association (ICMA). The initiative is verified by the green finance center "Astana GFC", the sole company in Central Asia accredited by ICMA and the Climate Bonds Initiative.

Gender bonds are available for purchase by companies, financial funds, international corporations, legal entities, and individuals. Proceeds from the bonds will be used to provide loans and foster growth in small and medium-sized enterprises involved in agricultural production and services. Eligibility for these loans is restricted to businesses led by women, owned by women, or those with at least 30 percent women employees. This initiative aims to promote gender equality and support sustainable economic development by investing in enterprises led by women<sup>42</sup>.

The development of women's entrepreneurship can help unlock women's potential as active participants in socio-economic transformations within their communities. When provided with equal conditions and opportunities, women demonstrate entrepreneurial capabilities comparable to men. As women's incomes rise, they often allocate more resources towards education, healthcare, and enhancing children's well-being, thereby fostering positive changes in their families and communities<sup>43</sup>.

**Entrepreneurship development can help position women as agents of change in the energy transition, rather than as victims of energy poverty or beneficiaries of improved energy access.**

<sup>42</sup>11/14/2022 Women's entrepreneurship. Kyrgyzstan will begin issuing gender bonds. <https://kaktus.media/470558>

<sup>43</sup> <https://energja.org/impact-area/womens-economic-empowerment/>



**An interview with Eleonora Kazakova, the Head of a private electricity generating company (SHPP) and the Chairman of the Association "RES KR", a non-profit organization that brings together companies working in the field of renewable energy sources (RES) and the environment, is a striking example of women entrepreneurs in the energy sector, actively promoting the development of green energy and the energy transition.**

I personally did not experience any obstacles in choosing professions and the type of activity that I chose for myself. In Kyrgyzstan, there are universities and secondary specialized institutions that offer a wide selection of specialties in various fields, including energy, without gender restrictions. But statistically, girls are less interested in technical subjects and are less likely than boys to choose technical professions in the future. Obviously, this is due to stereotypes in society, the belief that technical professions are more difficult for women, or they can negatively affect the health of women whose main role is that of a mother.

**There is a paraphrased joke among energy workers: "a chicken is not a bird, a woman is not an electrician."**

The development of new technologies of today, including the operation of modern low- and medium-power power plants, provide new opportunities for women to master new professions in the energy sector, which will allow women to optimize their employment.

The work of many energy facilities today involves digital technologies and activities not associated with heavy physical labor: engineering, design, dispatch, production economics, law and finance, with their own "energy" specifics.

There are no legislative restrictions in Kyrgyzstan on the promotion of women to leadership positions. But, since in the public sector the selection of vacancies, including for leadership positions, occurs through competition, men will always have reasons to reject a female candidate, citing the potential preoccupation of women with their children and

family responsibilities. It is necessary to establish clear quotas for vacancies and criteria that ensure the participation of more women, including in leadership positions.

Popularization of the profession in the education system, legislative norms on quotas for vacancies with an equal gender balance, social organization of working conditions for women in state-owned enterprises through the mandatory preservation of jobs for women after leaving maternity leave, the creation of more kindergartens, the possibility of working online, which has been successfully practiced recently, if there is no production requirement for the mandatory presence of a person at the workplace - such factors will allow women to take a more significant place in the energy sector.

A completely different picture is now observed **in the private sector, where women have virtually no restrictions in choosing their career.**

The development of small and medium-sized businesses opens up equal opportunities for women, along with men. If we talk about the energy sector, and in particular the renewable energy sector, we can say that **the renewable energy sector in Kyrgyzstan has a "female face"**. A number of specialized Associations, foundations and non-governmental organizations in our country are headed by women who actively work both in the production sector and in promoting new technologies, improving the regulatory framework in the renewable energy sector and energy efficiency, in popularizing energy professions among young people and girls in particular.

### **4.3. Gender aspects of women's participation in decision-making and strategic planning in the energy sector**

The representation of women in decision-making and strategic planning roles, both nationwide and particularly within the energy sector, remains significantly lower compared to men. Despite some special measures being implemented, the imbalance in favor of men in government and management roles persists prominently. The institutional mechanisms aimed at achieving gender equality are unstable and suffer from insufficient capacity<sup>44</sup>.

Women's participation in national decision-making has seen a slight improvement in recent years but remains below the minimum 30 percent required by law. The proportion of parliamentary seats held by women increased from 15.6 percent in 2015 to 21.1 percent at the beginning of 2023. At the local level, there has been more significant progress, with women occupying 37 percent of seats in city and village councils as of early 2023, compared to 21.7 percent in 2015.

There are also no women represented in the Jogorku Kenesh Committee on the fuel and energy complex, subsoil use and industrial policy. The committee is chaired by a man, and all seven of its members are also men.

The representation of women in leadership positions across various public and private organizations in the country increased from 36.1 percent in 2015 to 42 percent in 2022.

#### **However, men still predominate in public administration and local self-government.**

In 2022, although 41.4 percent of positions in public administration were held by women, they were predominantly in administrative roles. Specifically, women occupied only a third of political and executive positions (31.4 percent) in the public administration offices. The highest representation of women in political and executive roles is in the Ministry of Health (60 percent), the Ministry of Education and Science (40 percent), and the Ministry of Labour, Social Security, and Migration (40 percent). In the

Ministry of Energy (MOE) of the Kyrgyz Republic, which is directly responsible for managing the country's energy sector, only 30 percent of all positions are held by women, but almost all of them are administrative. Only one woman currently holds a political and special position at the Ministry, the First Deputy of MOE of the Kyrgyz Republic.

In the Department for Regulation of the Fuel and Energy Complex under the Ministry of Energy of the Kyrgyz Republic, half of all employees are women, including the Deputy Director. However, in the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic, while 34.7 percent of employees are women, only 25 percent of political and special positions are held by them.

«The gender of leaders matters. Globally, it's known that women often make more environmentally friendly and sustainable decisions and are less prone to corruption. However, in the energy sector, women's leadership potential isn't fully recognized. They often get stuck in lower-level positions like department heads while men take the spotlight.

There are many reasons for this. Men often support each other, and traditional family and societal roles for women also hold them back. Maternity leave policies and workplaces that don't accommodate working mothers also make it difficult for women to advance. There are even practical issues, like ill-fitting work uniforms designed without considering women's bodies.

Around the world, efforts are being made to encourage more women to pursue careers in STEM fields, including engineering and technology. However, in many Kyrgyz families, especially in rural areas, there's still a belief that technical schools like Polytechnic University aren't suitable for girls". – from an interview with an industry representative.

<sup>44</sup> <https://www.unwomen.org/sites/default/files/2022-06/Kyrgyz%20Republic%20%28RUS%29.pdf>

**Among the largest energy companies in Kyrgyzstan, women are notably absent from leadership positions.** For instance, at JSC Electric Stations, the general director and all three deputies are men. Similarly, at Bishkekteploset, the director and all deputy directors are men. At OJSC Chakan HPP, the general director and two deputies are men. At JSC National Electric Grid of Kyrgyzstan, the entire board of directors, the general director, and four deputies are men. The management team at Kyrgyz Komur State Enterprise, including the general director and four deputies, consists entirely of men. Likewise, at Kyrgyzteploenergo State Enterprise, all managerial positions are held by men.

**In general, women's participation in decision-making and strategic planning within the energy sector remains insufficient, resulting in the development of predominantly gender-neutral or gender-blind policies.** From interviews with industry insiders and analysis, key factors hindering women's participation include:

- Limited engagement of women in political and decision-making roles across all sectors in Kyrgyzstan, influenced by social norms, cultural dynamics, and restricted access to the resources and knowledge essential for effective policy engagement.
- Social norms and traditional gender roles that discourage women from pursuing leadership roles, impacting decisions on appointing women to key positions, particularly in male-dominated fields like energy.
- Social norms and gender stereotypes about how women should (or should not) behave, compounded by familial and societal attitudes, lack of support, and the burdens of domestic responsibilities.
- insufficient mainstreaming of gender issues across policy domains, including energy, at both state and societal levels.

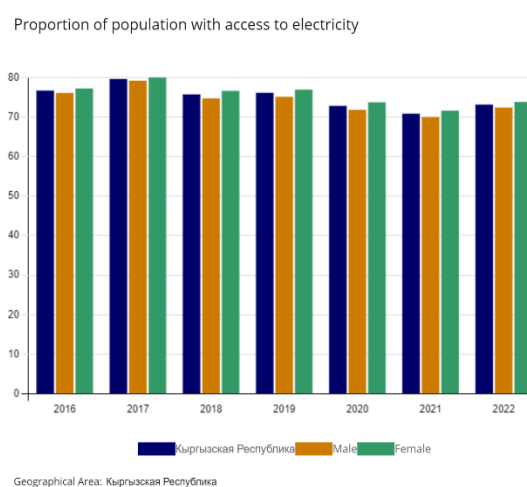
#### **4.4. Gender Impact of Energy Infrastructure**

Kyrgyzstan is currently facing a severe energy crisis marked by significant challenges in its energy infrastructure. Outdated and worn-out equipment in hydroelectric power plants (HPPs), low water levels, accidents at thermal power

plants, as well as rolling power outages in the winter months are compounding issues. These factors, alongside increasing demand for electricity from households and businesses, are contributing to an unstable energy situation in the country. Such energy infrastructure problems can disproportionately affect women and worsen existing gender inequalities in access to energy services.

The vast majority of the population has access to electricity, 73.79 percent of women and 72.38 percent of men in 2022 (Figure 7). However, **nearly a third of the population experiences frequent power outages**, occurring more than once a month, according to data from the NSC KR.

*Figure 7. Share of the population with access to electricity, 2016-2022.*

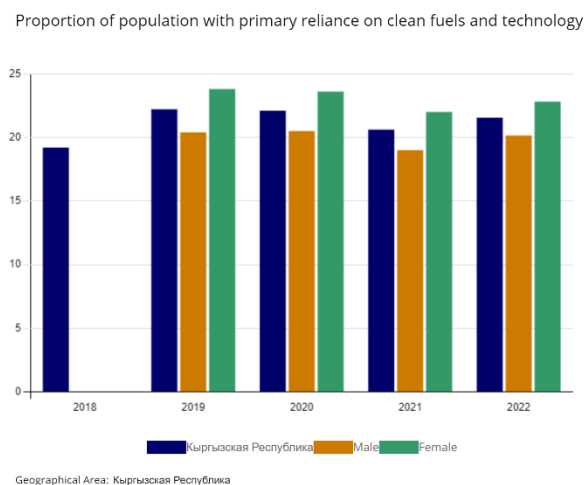


*Source* : Data from the NSC KR, [sustainabledevelopment-kyrgyzstan.github.io](https://sustainabledevelopment-kyrgyzstan.github.io)

Urban households show a higher connection rate to central heating systems at 31.7 percent, whereas rural households lag significantly behind at only 0.5 percent. Approximately one-fifth of the country's population resides in households primarily relying on clean fuels and technologies for heating and cooking. Although there was a slight decline in the use of clean fuels from 2020 to 2021, the trend reversed in 2022, showing growth in both men-headed and women-headed households. Notably, the proportion of women using primarily clean fuels and technologies in 2022 was higher than that of men, standing at 22.81 percent (Figure 8). In

terms of fuel types, **coal remains the predominant fuel** used by 70.3 percent of the population, followed by firewood and charcoal at 6.3 percent, and dung at 3.7 percent, according to the Multiple Indicator Cluster Survey (MICS-2018). Women and children are primarily engaged in collecting dung, brushwood, and small firewood. To conserve energy for heating, a common strategy is to heat only a portion of the house or a single living room<sup>45</sup>.

Figure 8. Proportion of population using mainly clean fuels and technologies, 2019-2022.



Source: Data from the NSC KR, [sustainabledevelopment-kyrgyzstan.github.io](https://sustainabledevelopment.kyrgyzstan.github.io)

There are no exact statistics on street lighting, but the following NSC data indirectly suggests that street lighting at night may be inadequate: while 78 percent of men report feeling safe walking down the street in their area after dark, only 54.15 percent of women feel safe under similar conditions (Figure 9).

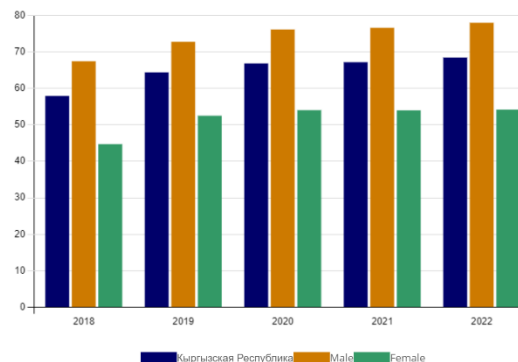
Insufficient street lighting affects men and women differently. Besides feeling insecure, women experience greater limitations on their mobility at night, impacting their ability to attend school, work, or engage in entrepreneurship, ultimately affecting their income and economic vulnerability. Moreover,

<sup>45</sup>Sustainable Development Goals and Gender in Kyrgyzstan, 2023. Statistical Publication. - B.: 2023. - 68 p.

<sup>46</sup>ENERGIA. Concepts and Issues in Gender and Energy. 2002.

inadequate street lighting can restrict women's participation in social and community activities<sup>46</sup>.

Figure 9. Proportion of people who feel safe on the street after dark, 2018-2022.



Source: Data from the NSC KR, [sustainabledevelopment-kyrgyzstan.github.io](https://sustainabledevelopment-kyrgyzstan.github.io)

Low access to energy infrastructure in the Kyrgyz Republic, including limited access to the gas network, reliance on individual heating and cooking methods, and inadequate street lighting, particularly in rural areas, can have distinct gender implications. Primarily, this situation contributes to **heightened health risks**. Women shoulder the primary responsibility for household chores like cooking and heating, especially in rural settings where coal stoves are prevalent. Exposure to indoor air pollution from traditional cooking and heating practices can lead to health issues such as respiratory and cardiovascular diseases. These health risks disproportionately affect women, who typically spend more time indoors managing these household tasks<sup>47</sup>.

In addition, **limited access to energy infrastructure significantly affects women's daily time allocation**, especially during frequent electricity outages or in case of limited access to gas or central heating. Women in the Kyrgyz Republic devote almost five times more time on unpaid domestic work than men, spending more time at home and therefore being more dependent on heating space and indoor air quality. Moreover, women rely more

<sup>47</sup>UNICEF. Health and Social Impacts Of Air Pollution On Women And Children In Bishkek, Kyrgyzstan. November 2022.

<https://www.unicef.org/kyrgyzstan/media/8116/file/Executive%20Summary%20of%20Air%20Pollution%20report.pdf>

on energy for household appliances such as ovens, washing machines, dishwashers, vacuum cleaners.

Collecting fuel like brushwood, dung, and firewood, along with tasks such as obtaining clean water (especially when using electric pumps), maintaining stoves, and cooking and heating on stoves, all consume significant time. This situation can worsen existing gender disparities by reducing women's time available for education, income-generating activities, leisure, and community engagement. Currently, women in the Kyrgyz Republic spend an average of 76 minutes daily on food preparation, whereas men spend just 6 minutes. Washing dishes, doing laundry, caring for clothes, and cleaning the home take 102 minutes per day for women in urban areas and 126 minutes in rural areas. In contrast, women spend approximately 46 minutes daily on self-education and study (compared to 54 minutes for men) and only 12 minutes on entrepreneurial activities (compared to 50 minutes for men).<sup>48</sup>

Limited access to energy infrastructure and the necessity of using coal and wood stoves indoors can also pose **safety risks**, including the potential for burns, accidents, and household fires. Women, typically responsible for household chores, may bear a disproportionate burden of managing these risks, which can also affect their sense of security and increase stress levels<sup>49</sup>.

Additionally, a common strategy to save on heating costs involves heating only a part of the house or just one room. This practice significantly reduces the family's living space, which can be particularly inconvenient for women and children who spend more time at home.

Limited access to energy infrastructure also impacts gender dynamics during both internal and external migration. Migrants often encounter uncomfortable living conditions in informal settlements where housing lacks legal

documentation and necessary infrastructure, including access to energy services. Women, who typically bear the main burden of household chores and spend more time at home, face more challenges when moving to new locations.

## Conclusions

Gender segregation persists and is increasing in energy education in the Kyrgyz Republic. Despite recent increases in women's participation in employment and entrepreneurship within the sector, gender disparities in these areas still remains a serious problem. Women not only work less in the industry but also face significant barriers to holding leadership positions. Social norms and the persistent stereotypes that label industry as not suitable for women contribute to the lack of attractiveness of energy specialties for women. These biases affect women's experiences during education, employment, promotion, training and professional development. The scarcity of women role models in energy, especially in executive and decision-making roles, further reinforces these barriers. Gender biases, rooted in societal and family roles, also shape women's perceptions and ambitions within the energy profession, leading to internalized biases and impeding their full potential. It is estimated that over 98 percent of population have at least one gender bias related to aspects of politics, education, economic activity or physical integrity<sup>50</sup>.

Women entrepreneurs in the energy sector face common challenges such as limited access to financing, bureaucratic hurdles, and societal norms regarding women's roles. However, entrepreneurship offers women greater flexibility and a pathway to overcoming systemic barriers and realizing their potential. Most women entrepreneurs operate in renewable energy, where innovative solutions are highly valued and facilitate success regardless of gender.

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<sup>48</sup>Based on the data provided in the Table "Structure of daily time costs for persons aged 12 years and older by gender" of the NSC KR.

<sup>49</sup>World Economic Forum. Here's How The Fuel We Cook With Can Affect Our Mental Health (2022).

<sup>50</sup> <https://www.undp.org/ru/kyrgyzstan/press-releases/bogatye-strany-dostigayut-rekordnogo-urovnnya-chelovecheskogo-razvitiya-v-vremya-kak-v-polovine-bedneyshikh-stran-etot>

The expansion of off-grid renewable energy systems is creating job opportunities for women across different segments of the value chain. Many of the necessary skills can be locally developed, empowering women to lead in delivering off-grid renewable energy solutions.<sup>51</sup>

Despite growth in the number of women in public administration, their representation in political and specialized energy sector roles remains disproportionately low. None of the largest energy companies in Kyrgyzstan are led by women, highlighting the significant gender gap at decision-making levels.

Low access to many types of energy infrastructure—such as limited gas network coverage, reliance on individual heating methods, and inadequate street lighting—poses serious gender implications. These include heightened health and safety risks for women, restricted mobility, reduced time for education, income-generating activities, leisure, and community engagement.

### Recommendations:

- Increase the number of women studying in the energy field by providing targeted scholarship programs, and raising awareness and promoting gender sensitivity among students, teachers and parents.
- Promote mentoring and networking programs tailored to female students and women in the energy sector to support and assist with job placement and career planning.
- Establish and strengthening of professional associations that advocate for women's support, including flexible work arrangements, family-friendly policies, mentoring, and vocational training opportunities, ensuring gender equality.
- Develop targeted initiatives and programs to enhance the recruitment, retention and advancement of women in the energy sector, especially in leadership positions, including gender-sensitive recruitment policies and career development programs.

- Targeted support for women entrepreneurs in the energy sector by offering preferential financing, training, and mentorship.
- Strengthen policies aimed at improving gender diversity and inclusivity in decision-making and leadership in the energy sector, including implementing quotas or targets for women's representation on boards and in executive roles.
- Foster an understanding of women's diverse roles in the transition to new energy systems, supporting them as potential agents of socio-economic change within their communities<sup>52</sup>.
- Develop gender-sensitive energy infrastructure to address specific needs of women and reduce the barriers they face, including improving access to clean and efficient energy, enhancing street lighting for safety, and ensuring inclusive urban and rural development planning.
- Improve gender-disaggregated statistics on energy infrastructure and entrepreneurship to better inform policy and initiatives.

<sup>51</sup> [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Jan/IRENA\\_Gender\\_perspective\\_2019\\_RU\\_Summary.pdf?la=en&hash=591365BAC897DC0F2F41227E17A1EC3BCFC20F4F](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Jan/IRENA_Gender_perspective_2019_RU_Summary.pdf?la=en&hash=591365BAC897DC0F2F41227E17A1EC3BCFC20F4F)

<sup>52</sup> [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Jan/IRENA\\_Gender\\_perspective\\_2019\\_RU\\_Summary.pdf?la=en&hash=591365BAC897DC0F2F41227E17A1EC3BCFC20F4F](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2019/Jan/IRENA_Gender_perspective_2019_RU_Summary.pdf?la=en&hash=591365BAC897DC0F2F41227E17A1EC3BCFC20F4F)

## 5. Gender differences in access to energy at a household level

This section was written based on the results of a survey of 1051 households conducted in February/March 2024 in 13 target residential areas of Bishkek/Chui region and Jalal-Abad region.

The purpose of the survey was to study the energy vulnerability and poverty of households in selected residential areas, as well as their impact on the main components of human development, in order to identify the causes and develop recommendations for improving energy supply and energy use in these households. The quantitative survey was conducted using the method of personal formalized face-to-face interview with the respondent.

In this section, the survey results will be examined with a focus on gender aspects of cooking practices, space heating/cooling, access to stable energy, fuel costs, and health implications of air pollution. The specific research questions are:

- What are the gender differences in using energy for cooking and heating?
- What are the gender differences in energy decision-making on a household level?
- What are the gender differences in accessing reliable electricity?
- What are the gender differences in energy costs?
- What are the health implications of using dirty fuels on women?

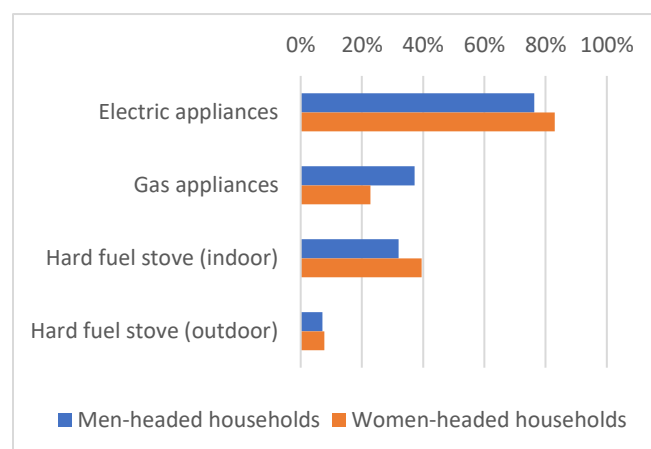
### 5.1. Gender roles in energy use for cooking

Cooking responsibilities in Kyrgyz households overwhelmingly fall on women, regardless of the household head's gender, residence, age, education, or ethnicity. In 96 percent of households surveyed, adult women handle food preparation, with only 1 percent involving girls under 18. The reasons cited for this division of labor vary: in 46 percent of male-headed households (MHH) and 30 percent of women-

headed households (WHH), it's attributed to traditional cultural norms. Additionally, men in half of households and women in a third attribute this division to women's existing skills. These findings highlight the impact of gender stereotypes and unequal distribution of household responsibilities, which can limit the opportunities of women and girls in other areas of life, including education and professional activities.

Furthermore, higher education levels and family incomes tend to reinforce these traditional roles, irrespective of the household head's gender, highlighting entrenched societal expectations.

Figure 10. Equipment used for cooking (multiple answers are allowed)

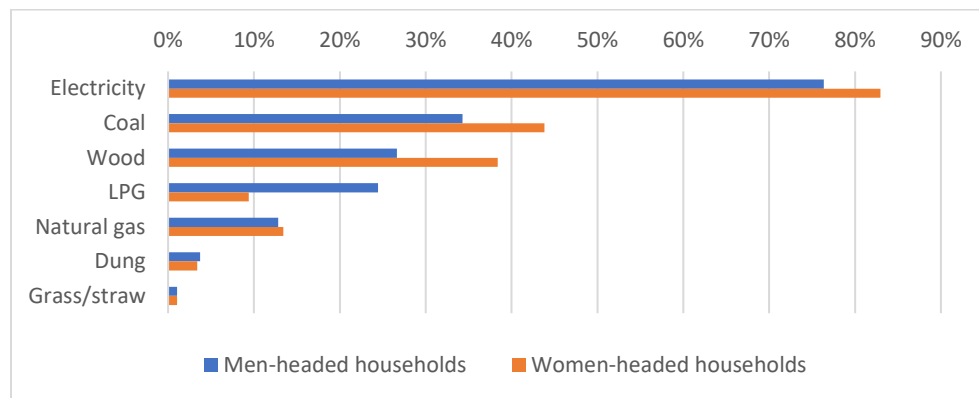


Using solid fuel stoves indoors for cooking, which is common in 33 percent of households primarily due to cost-effectiveness and convenience, significantly impacts indoor air quality. Survey findings indicate that households using solid fuel stoves are more likely to report indoor air pollution. Given that women are predominantly responsible for cooking, they are the most vulnerable to adverse health effects caused by the use of coal and wood.

In addition, women-headed households are more likely to use solid fuel for cooking

compared to men-headed households, highlighting women's greater vulnerability to the health risks associated with indoor air pollution from solid fuel stoves.

Figure 11. Types of fuel used for cooking



Women heads use dirty fuels for cooking more often than male heads, and these differences are statistically significant (Table 2). Since dirty fuels are typically associated with higher levels of indoor air pollution, this finding suggests that female-headed households might be at greater risk of health issues related to poor air quality,

such as respiratory diseases. Additionally, the increased use of dirty fuels can have environmental impacts, contributing to deforestation and air pollution.

Table 2. Percentage of households using dirty fuels for cooking, according to gender of head of household

Gender of Head of household	Use of dirty fuels: 'Yes'	Use of dirty fuels: 'No'	Chi-square test statistics	Chi-square p-value
Woman	51.68%	48.32%	9.02	0.003***
Man	40.71%	59.29%		<i>Difference is statistically significant</i>

Using an oven instead of an electric or gas stove takes longer for cooking. According to the NSC, women spend an average of one hour a day preparing food. A more equal distribution of cooking responsibilities between men and women in the family, along with the use of electric and gas stoves and other modern appliances (like air grills, multicookers, etc.), can free up a significant amount of women's time. This transition to clean energy sources can allow women more time for education, self-education, work or entrepreneurship, social and community activities, as well as leisure and creativity.

### 5.2. Gender roles in energy use for heating and heating

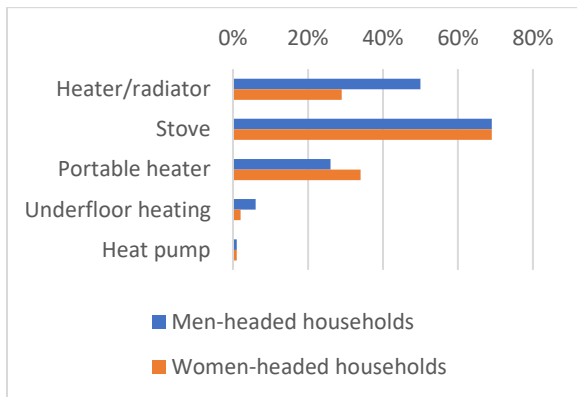
The burden of heating the home is distributed more evenly between women (45 percent of

households) and men (54 percent of households), but there are significant regional differences. In Bishkek and the Chui region, men handle heating in 70 percent of households, while in the Jalal-Abad region, women are responsible in 85 percent of households. Ethnicity and education of the household head, as well as family income, also influence this distribution. In households where the head is an ethnic minority, women are more likely to handle heating (85 percent of households). Additionally, the more educated the household head and the higher the family income, the less likely women are to be responsible for heating.

Households attribute this distribution to skills, availability of free time, established family roles, and traditional and cultural norms.

The vast majority of households, regardless of the gender of the head, heat their homes with coal (81 percent) and wood (56 percent). In general, women-headed households are more likely to use stoves for heating and are less likely to use radiators/radiators and underfloor heating (Figure 12 and Figure 13), indicating a greater degree of energy vulnerability compared to men-headed households. Women explain the use of stoves and solid fuels by citing reasons such as economy, ease of use, maintaining a comfortable temperature, and lack of alternatives.

Figure 12. Heating equipment by household head's gender



Even though the difference between WHH and MHH in use of dirty fuels for heating is not statistically significant (Table 3), the dominant use of dirty fuels in all households might still disproportionately hit women. As women typically spend more time indoors to do household chores and take care of children, they are more exposed to indoor air pollution, which can lead to various health issues including respiratory problems, cardiovascular diseases, and adverse effects on pregnancy and fetal development.

Figure 13. Types of fuels used for heating by household head's gender

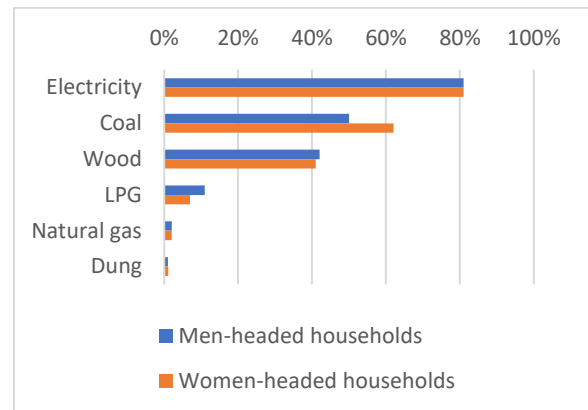


Table 3. Percentage of households using dirty fuels for heating, according to gender of head of household

Gender of Head of household	Use of dirty fuels: 'Yes'	Use of dirty fuels: 'No'	Chi-square test statistics	Chi-square p-value
Woman	83.61%	16.39%	0.0661	0.797
Man	82.90%	17.10%		<i>Difference is not statistically significant</i>

There's a notable discrepancy between women's role in energy consumption and their role in energy decision-making and procurement. Women are primarily responsible for preparing food and actively participate in heating homes, but decisions about purchasing energy sources are usually made by the heads of households, who are predominantly men (80 percent of all households). The higher role of men in decision-making on a household level is explained by the respondents by traditional roles in society and family, as well as personal preferences and skills.

### 5.3. Gender differences in access to reliable electricity services

Gender differences in access to reliable electricity services are minor during the off-heating season. During this period, 24 percent of women-headed households experience interruptions 2-3 times a month, and 4 percent

experience interruptions once a week or more often.

However, during the heating season, women-headed households face more limited access to reliable electricity services compared to men-headed households, which is statistically significant. Among women-headed households, 57 percent experience disruptions more than once a month, with 14 percent experiencing disruptions several times a week and 8 percent every day. In contrast, among men-headed households, 44 percent experience disruptions more than once a month, with 6 percent experiencing disruptions once a week and 5 percent every day. This disparity can be attributed to women spending more time at home, making them more likely to be affected by power outages. These outages significantly hinder the ability to prepare food, use electronic devices, and perform daily tasks, thereby worsening the overall quality of life.

Table 4. Frequency of power outages, according to gender of head of household

Gender of Head of household		No outages	Few times a year	Once a month	2-3 times a month	Once a week	Few times a week	Every day	Chi-square test statistics	Chi-square p-value
Off-heating season	Woman	25%	33%	16%	22%	3%	1%	0%	5.95	0.311 <i>Difference is not statistically significant</i>
	Man	30%	30%	13%	22%	2%	3%	0%		
During heating season	Woman	10%	21%	12%	27%	9%	14%	8%	14.04	0.029** <i>Difference is statistically significant</i>
	Man	14%	24%	20%	23%	6%	11%	5%		

Limited access to reliable electricity can negatively impact women's economic well-being. It reduces their time for paid work and entrepreneurship, lowering overall productivity. Additionally, it affects their ability to pursue education and self-education, and can potentially impact their mental health.

### 5.4. Gender differences in energy costs

Gender differences in poverty levels in the Kyrgyz Republic vary by region. According to NSC KR, women experience higher poverty rates than men in Osh, Naryn, Jalal-Abad, and Talas, with a national average poverty rate of 32.8 percent. Women's average cash income per capita is 13.8 percent lower than men's, amounting to 7,591 soms per month.

Among households participating in the NHDR survey, women-headed households have, on average, lower monthly incomes than those managed by men. The gender gap in monthly income per person is 16 percent. Additionally, the monthly income per person in women-headed households barely reaches the national subsistence level of 7,681.5 soms and is below the subsistence level in Bishkek, which is 7,901.1 soms.

Among the surveyed households, there are no significant gender differences in the structure of energy expenditures, except for spending on gasoline or other fuel for personal vehicles. Women-headed households spend less energy for transport because they own vehicles less frequently.

Table 2. Energy costs by gender of the household head

	Men-headed households		Women-headed households		Two-sample t test	p-value
	Amount	N	Amount	N		
<b>Average amount per month, in soms</b>						
<i>Monthly household income</i>	<b>37,685</b>	<b>813</b>	<b>30,729</b>	<b>238</b>	<b>3.5312</b>	<b>&lt;0.001***</b>
Monthly income per person	8, 221	813	7,914	238	1.9635	0.0498**
<b>Energy costs during heating season:</b>						
Electricity	1,298	804	1,206	232	1.2183	0.2234
Natural gas	6,685	93	5,264	22	1.5357	0.1274
Hard fuel	5,015	638	4,966	176	0.2620	0.7934
Liquefied gas (gas in cylinders)	637	171	700	23	-0.8446	0.3994
Gasoline, diesel fuel, gas for transport	7,585	244	6,625	24	0.8931	0.3726
<b>Total energy costs (in soms)</b>	<b>8,394</b>	<b>813</b>	<b>6,070</b>	<b>238</b>	<b>5.5960</b>	<b>&lt;0.001***</b>
<b>% of energy costs from total household income</b>	<b>22.3%</b>	<b>813</b>	<b>19.8%</b>	<b>238</b>		
<b>Energy costs during off-heating season:</b>						
Electricity	395	792	404	230	-0.4703	0.6382
Natural gas	312	87	320	22	-0.1731	0.8629
Hard fuel	30	647	45	192	-1.21	0.2276
Liquefied gas (gas in cylinders)	573	171	591	23	-0.2503	0.8026
Gasoline, diesel fuel, gas for transport	6,535	248	5,796	24	0.7931	0.4284
<b>Total energy costs (in soms)</b>	<b>2,556</b>	<b>813</b>	<b>1,098</b>	<b>238</b>	<b>5.4702</b>	<b>&lt;0.001***</b>
<b>% of energy costs from total household income</b>	<b>6.8%</b>	<b>813</b>	<b>3.6%</b>	<b>238</b>		

In total energy expenditure, households headed by women spend less than those headed by men, and the difference is statistically significant. During the heating season, households with women heads spend 19.7 percent of their monthly income on energy, while those headed by men spend 21.1 percent. During the off-heating season, WHH spend 3.6 percent of their income on energy, compared to 6.4 percent in MHH households.

This lower spending is mainly due to different practices used to reduce heating costs: 45 percent of women-headed households heat only part of the house or apartment to save money, whereas only 29 percent of men-headed households do this. There are also gender differences in awareness and use of energy-saving technologies. Households headed by men are more likely to use thermal insulation (50 percent) compared to those headed by women (23 percent).

Additionally, 68 percent of MHH install energy-saving windows and doors, while only 45 percent of WHH do so. (Figure 14).

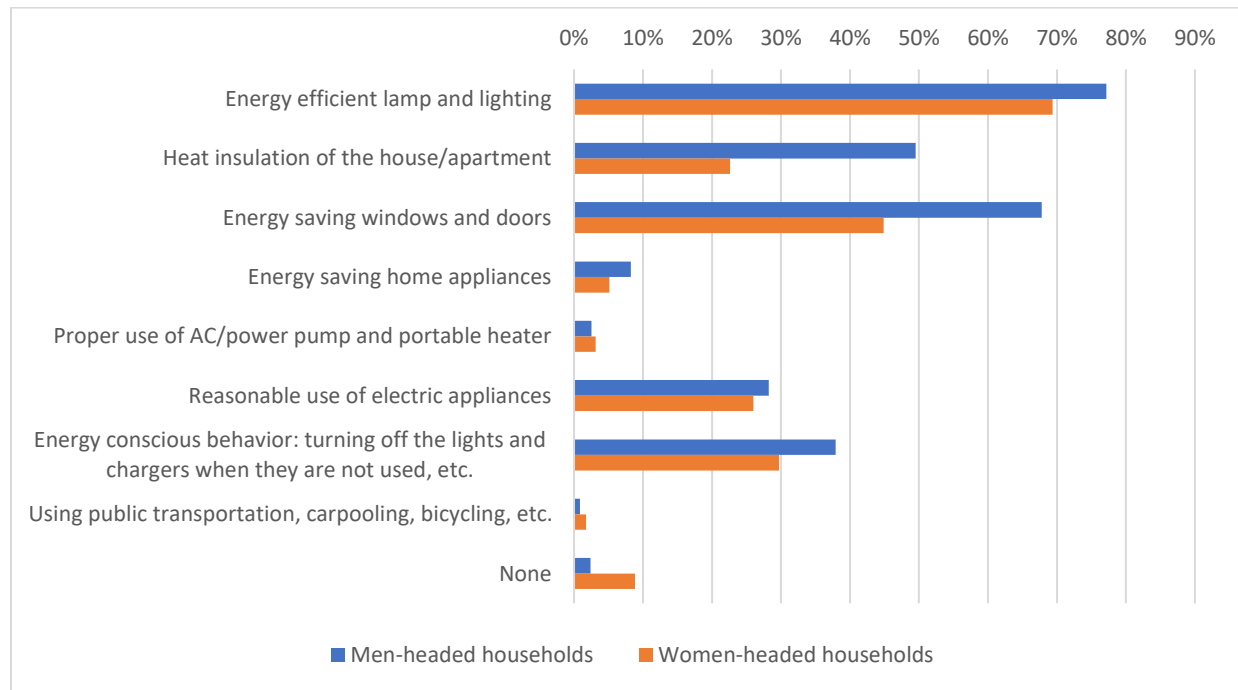
In addition, there are significant gender differences in transportation fuel costs. Since only 27 percent of households are headed by women, their share of expenses on fuel for transport is significantly lower (2 percent of income) than in households headed by men (6 percent of income).

Even though women-headed households spend a smaller share of their income on energy, they are more likely to struggle to pay their bills. Only a third of households with women heads do not encounter difficulties paying electricity bills, compared to 38 percent of men-headed households. 16 percent of these households struggle to pay their bills, and 55 percent

manage to pay by using other forms of energy or cutting other expenses. For example, 40 percent of households with women heads periodically forgo purchasing basic necessities to pay for energy resources. Additionally, 38 percent of households with women heads rate the current electricity tariff as high or very high.

Overall, during the heating season, all households in the selected residential areas are susceptible to energy poverty (spending more than 10 percent of their income on energy). Women-headed households spend less on energy, but the difference with men-headed households is negligible. Households with women heads more actively use energy-saving technologies and are often forced to sacrifice part of their living space when heating their homes to save money.

Figure 14. Share of households using energy saving measures by gender of the household's head



### 5.5. Health implications of dirty fuels in the context of indoor air pollution

It's concerning that almost half of households in Bishkek and the Chui region, and a third in the Jalal-Abad region, reported indoor air pollution, which can severely impact the health of all family members, including women. The primary cause of indoor air pollution was heating fuel

(79 percent of households), with cooking fuel contributing to a lesser extent (7 percent of households). Outdoor air pollution was also cited as a significant factor (33 percent of households).

A third of households (29 percent of those headed by women and 24 percent by men)

reported health issues among household members that they believed could be linked to air pollution. These findings underscore the urgent need for improved indoor air quality measures and transitioning to cleaner fuels to mitigate these negative health impacts, particularly for the most vulnerable groups: women, children, and the elderly who typically spend substantial amounts of time indoors. Cleaner fuels can significantly reduce indoor air pollution, thereby improving respiratory and overall health outcomes for these demographic groups. This transition is essential for creating safer and healthier living environments, ensuring that households can thrive without compromising their health.

## Conclusions

The results from NHDR survey underscore significant gender disparities in accessing reliable energy services, marked by limited gas network access, frequent power disruptions, and reliance on solid fuels for cooking and heating. Traditional and cultural roles have a significant influence on the distribution of decision-making roles in households. This highlights the deep entrenchment of traditional gender roles in household energy management, which can impact the effectiveness and equity of energy policies and practices. Indoor air pollution resulting from traditional energy practices poses considerable health risks, particularly affecting women and children who spend substantial time indoors. This exposure can lead to long-term health issues such as respiratory and cardiovascular diseases, with potential impacts on pregnancy and fetal development.

In addition, unequal access to energy and the distribution of the burden of household chores (cooking and heating) severely limit women's time budgets. In almost all households, cooking is the responsibility of women, and women are also responsible for heating the home in almost half of the households. These roles, shaped by cultural norms, severely constrain women's time for education, work, entrepreneurship, social engagement, and leisure activities. Women also encounter greater challenges in paying energy bills, often resorting to sacrificing basic necessities to cover these costs.

Despite the key role of women in energy use within households, the main decision makers on energy issues in the family are men. In addition to gender differences in the share of participation in energy decision-making, there is a predominance of an individual approach to energy management in households: despite the fact that both genders can participate in decision-making, joint decisions between men and women account for only a small share (6 percent).

Addressing these inequalities requires prioritizing cleaner energy solutions to improve indoor air quality and reduce health risks, particularly for vulnerable groups like women and children. Additionally, fostering gender-equitable distribution of household responsibilities and ensuring affordable and accessible energy services are crucial steps towards enhancing women's well-being and socioeconomic empowerment.

## 6. Existing projects aimed at addressing gender issues in the energy sector in the Kyrgyz Republic and Central Asia

Over more than three decades of independence, Central Asian countries have actively fostered multilateral relationships with leading international organizations and institutions providing financial and expert assistance across various sectors, including energy, environmental protection, climate change, and gender equality. Significant projects addressing gender issues in the energy sector are being implemented with support from key entities such as UNDP, the World Bank Group, the Asian Development Bank (ADB), the Organization for Security and

Cooperation in Europe (OSCE), and the European Union (EU).

Among Central Asian nations, Uzbekistan received substantial donor assistance for energy projects, while Kyrgyzstan focused on gender and institutional initiatives during the 2016-2020 period. In addition to financial aid, these countries benefit from expert guidance and non-financial resources aimed at promoting gender-sensitive and gender-responsive approaches. This support includes assistance in developing national and sector-specific strategies and plans.

**Table 2.** Total net ODA disbursements received by the CA countries over the period 2016–2020, USD million. Source: The authors' calculations based on the Query Wizard for International Development Statistics (QWIDS).

Countries	Environment Protection	Energy	Agriculture	Water Supply and Sanitation	Women's Rights Organizations and Movements, and Government Institutions
Kazakhstan	30.7	38.6	11.9	2.1	0.23
Kyrgyzstan	24.4	159.9	38.6	75.2	3.7
Tajikistan	28.9	405.8	131.4	123.5	2.4
Turkmenistan	5.5	7.3	0.4	---	0.1
Uzbekistan	191.3	1129.5	659.3	386.2	1.1

Source: Kovaleva, Filho, Borgemeister, and Komagaeva (2023)<sup>53</sup>

Most of the activities under these projects were undertaken to improve women's leadership and empowerment. Key measures implemented

include: improving access to information and financial resources, providing education

<sup>53</sup> Kovaleva, Marina, Walter Leal Filho, Christian Borgemeister, and Julia Komagaeva. 2023. "Central Asia: Exploring Insights on Gender Considerations in Climate Change" Sustainability 15, no. 16: 12667. <https://doi.org/10.3390/su151612667>

opportunities on climate change, and training and workshops, including on renewable energy. Among the projects aimed at solving gender problems in the energy sector and implemented in the last 10 years, the following can be noted:

- *ADB's Women in Energy Program*<sup>54</sup> (launched in 2022), is the first targeted initiative to advance women in the energy sector in Central and West Asia. The program aims to make the principles of the Equality 2030 vision the operating conditions of the region's energy industry, making equal opportunity, equal pay and equal leadership the new standard by 2030. The program includes four priority areas: increasing employment opportunities for women in the energy sector, strengthening women's educational training in key areas of the energy sector, supporting the visibility of women at the regional and international level, increasing organizational capacity in the development of gender-friendly policies and jobs.
- Project "Central Asia Water and Energy Program (CAWEP)" of the World Bank<sup>55</sup> (2012-2024), implemented in the region as a whole and aimed at ensuring water and energy security. Gender measures within the project are aimed at leadership and empowerment of women by including women in all activities, as well as their training.
- UNDP-UNEP Project "Poverty-Environment Initiative"<sup>56</sup> in Kyrgyzstan and Tajikistan, aimed at working with government agencies to raise awareness, improve decision-making processes and integrate poverty and environmental issues into national budgeting processes and the development of sectoral programs and plans (first phase 2011-2014, second phase 2014-2017). The project's gender interventions aimed to improve understanding and knowledge about the relationships between gender, sustainability and the environment, and poverty. Kyrgyzstan has also conducted research by educational institutions on the gender dimensions of poverty and climate change,

and Tajikistan has provided microloans for women-led green initiatives

- OSCE Program "The OSCE - GWNET Mentoring Program on Empowering Central Asian Women in Renewable Energy"<sup>57</sup> (2022), which aimed to increase the representation of women in management and leadership positions in the renewable energy sector. The program supported 30 mid-career women working in the energy sector and provided mentorship from the Global Women's Network for Energy Transition (GWNET). In March 2024, the OSCE, together with GWNET, also published the research work "Advancing a Just Energy Transition in Central Asia – Women's key role in the energy sector"<sup>58</sup>, which provides an analysis of the potential socio-economic benefits of gender-inclusive energy transitions in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The study, based on modeling, desk research, surveys and interviews with regional and international experts, provides employment data projections for the energy transition in Central Asia and identifies specific recommendations for strategic workforce development to ensure that the full potential of women's participation is harnessed.
- World Bank Project PROGREEN "Climate and Environment (CLIENT) Program in Central Asia"<sup>59</sup> (2021-2026), which aims to help Central Asian countries achieve sustainable, sustainable and inclusive economic growth with a focus on climate resilience, landscape restoration, urban air pollution management and circular economy, as well as a green and inclusive recovery from COVID-19. Gender measures within the project are aimed at training women and youth in rural areas.
- USAID's "Women's empowerment and gender equality"<sup>60</sup> projects in Central Asia, which promote gender equality in various areas, including climate change adaptation, natural resource management, and

<sup>54</sup> [https://energy.carecprogram.org/women-energy-summit/wp-content/uploads/2022/02/CENTRAL-WEST-ASIA\\_WIE-Program-Concept\\_final\\_for-Summit\\_RU\\_clean.pdf](https://energy.carecprogram.org/women-energy-summit/wp-content/uploads/2022/02/CENTRAL-WEST-ASIA_WIE-Program-Concept_final_for-Summit_RU_clean.pdf)

<sup>55</sup> <https://www.worldbank.org/en/region/eca/brief/cawep>

<sup>56</sup> <https://www.undp.org/malawi/projects/joint-undp-unesp-poverty-and-environment-initiative>

<sup>57</sup> <https://www.osce.org/occea/535134>

<sup>58</sup>OSCE (2024). Towards a just energy transition in Central Asia. The key role of women in energy.

<https://www.osce.org/files/f/documents/9/c/565519.pdf>

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<https://www.worldbank.org/en/topic/environment/brief/climate-and-environment-program-in-central-asia>

<sup>60</sup> [https://www.usaid.gov/sites/default/files/2023-03/2023\\_Gender%20Policy\\_508.pdf](https://www.usaid.gov/sites/default/files/2023-03/2023_Gender%20Policy_508.pdf)

strengthening the capacity of women and girls to realize their potential as managers and entrepreneurs.

- USAID Project "Power Central Asia"<sup>61</sup> (2020-2025), which aims to support Central Asian governments in achieving national and regional energy sector priorities and unlocking the economic benefits of regional electricity trade. Gender measures include the provision of scholarships for master's studies in energy specialties, a Women mentoring network and Youth Mentorship Network, as well as the launch of the Gender Council of the Ministry of Energy in Uzbekistan.
- Projects and initiatives of UNISON Group<sup>62</sup> (operating since 2002), aimed at improving energy efficiency while paying attention to

gender needs. In addition to project development, energy audit and certification, as well as analytical work, UNISON The Group is actively involved in raising public awareness about issues of energy efficiency, air pollution, and green technologies, including among women and residents of residential areas and new buildings around the city of Bishkek.

- Projects and initiatives of the Association of Women in Energy of Kyrgyzstan<sup>63</sup> (formed in February 2022), which are designed to support women in the energy sector, create a single platform for them where they will be heard and have the opportunity to realize their aspirations and potential in the energy sector.

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<sup>61</sup> <https://powercentralasia.org/en/>

<sup>62</sup> <https://www.unisongroup.org/en>

<sup>63</sup> <https://womeninenergy.kg/>

# Conclusion and recommendations

Despite women's predominant roles in household activities that heavily rely on energy, such as cooking and heating, their voices are often marginalized in decisions about energy resources and procurement. National and sectoral strategies typically lack sufficient gender sensitivity, often remaining gender-neutral or addressing only selected gender issues. Programs aimed at achieving gender equality largely rely on external funding, reflecting lower domestic prioritization of gender issues compared to other development areas.

Gender segregation persists in education, employment, and entrepreneurship within the energy sector in the Kyrgyz Republic, which remains largely male-dominated. Social norms and stereotypes that associate the energy industry with men contribute to the sector's unattractiveness to women, perpetuating gender biases in education, employment, promotion, and participation in training and professional development programs. Women's representation in decision-making and strategic planning, both nationally and especially within the energy sector, remains significantly lower than men, with few women in political or senior positions in energy companies.

Entrepreneurship among women in the energy sector, particularly in renewable energy sources, offers a pathway to overcoming systemic barriers and reducing gender inequality in the industry. Increasing women's participation in leadership and policy-making roles within the energy sector can foster more sustainable solutions and advance the energy transition.

Unequal access to energy infrastructure in the Kyrgyz Republic, including limited access to the gas network, reliance on individual heating methods, and inadequate street lighting, poses serious gender implications. These include heightened health and safety risks for women, restricted mobility, reduced opportunities for education, income-generating activities, leisure, and community engagement.

The disparity between women's roles as primary energy users and their limited participation in energy decision-making underscores the urgent need for greater gender sensitivity in strategic

planning processes and energy policy development in the Kyrgyz Republic. By excluding women from these decisions, there is a risk of overlooking their unique perspectives and needs, as well as their potential as change agents, thereby undermining efforts toward achieving gender equality and a just energy transition.

## Recommendations

### *1. Transition to Gender-Sensitive Energy Legislation and Strategies:*

Shift energy legislation and strategic programs from gender-neutral to gender-sensitive or transformative approaches. Explicitly recognize women's roles as energy users, managers, and drivers of the energy transition.

### *2. Enhance Gender Examination Mechanisms:*

Improve the gender examination of legislative and regulatory acts to ensure it considers the diverse needs of gender groups. Enhance the capacity of Jogorku Kenesh staff for gender expertise and allocate funds for independent gender assessments. Streamline procedures to include adequate time for public consultation and timely publication of acts.

### *3. Incorporate Gender Equality Measures in Sectoral Strategies:*

Develop and implement specific measures within sectoral strategies to achieve gender equality in the energy sector. Address gender segregation in education, employment, and entrepreneurship. Enhance women's economic opportunities through improved access to energy resources and decision-making at local and national levels. Integrate gender-sensitive approaches into climate change adaptation efforts.

### *4. Promote Sustainable Financing for Gender Programs:*

Diversify funding sources for gender programs beyond reliance on external funding. Foster government ownership and commitment to gender issues, facilitating greater engagement with local stakeholders.

### *5. Promote Women's Participation in Energy Education:*

Increase women's enrollment in energy-related studies by providing targeted scholarship

programs, and raising awareness and promoting gender sensitivity among students, teachers and parents.

*6. Support Mentoring and Networking Programs:*

Establish mentoring and networking initiatives for students and women in the energy sector. Provide guidance and support for career development and employment opportunities.

*7. Implement Targeted Initiatives for Women in Leadership:*

Develop initiatives to attract, retain, and advance women in leadership roles within the energy sector. Implement gender-sensitive recruitment policies and career development programs.

*8. Support Women Entrepreneurs in the Energy Sector:*

Provide targeted support for women entrepreneurs in the energy sector, including access to preferential financing, training, and mentoring programs.

*9. Strengthen Policies for Gender Diversity in Energy Leadership:*

Enhance policies to promote gender diversity and inclusion in decision-making and leadership appointments. Consider quotas or targets for women's representation on boards of directors and in executive positions.

*10. Develop Gender-Sensitive Energy Infrastructure:*

Design energy infrastructure that meets the specific needs of women. Improve access to clean and efficient energy, enhance street lighting for safety, and ensure inclusive urban and rural development planning processes.

*11. Improve Gender-Disaggregated Data Collection:*

Enhance the collection and analysis of gender-disaggregated data on energy infrastructure and entrepreneurship. Use this data to inform policies and programs effectively.

*12. Promote Regional Cooperation for Inclusive Energy Transitions:*

Strengthen regional cooperation efforts to foster a just and inclusive energy transition across Central Asia. Facilitate knowledge sharing and collaborative initiatives to address gender disparities in the energy sector.

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