Task Force C:
Women's Empowerment

Discussion Paper:
Draft CAREC Women-in-Energy Program

April 2021

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1 The need for a CAREC Women-in-Energy Program and why now

CAREC's energy sector is characterized by a relatively homogenous work force in terms of gender, age and educational background. Women remain especially underrepresented in the energy sector across the region. This mirrors a global trend where women account for only around 20% of the global overall energy workforce and 11% of top global oil and gas executives. Thus, there are many opportunities and entry points for opening the energy industry to women and diversifying the sector's workforce.

The objective of the Women-in-Energy Program of Central Asia is to establish a set of actions that will support women's visibility, influence and participation across the energy value chain. The Program is particularly focused on women's employment and the potential for employment in the energy sector, broadly defined. This is interpreted to include quality employment opportunities from entry level to executive management, as well as women's full engagement in policy making, oversight and decisions in long term sustainable energy system decisions and designs, and research and teaching opportunities for women in the STEM sector.

The need for improving gender equity in CAREC's energy sector is clearly articulated in the CAREC Energy Strategy 2030 which contains a cross-cutting focus area on women's empowerment. The Energy Ministers of the CAREC countries firmly supported this vision and committed to achieving gender equality in the energy sector by 2030 through a Ministerial declaration adopted at the first CAREC Energy Ministers Dialogue in Tashkent in 2019:

> *"We note that women remain underrepresented in the energy industry of the CAREC region. Recognizing the benefits of a diverse, inclusive and balanced talent pool in the energy sector, we strive to reach gender equality by 2030. In this regard, we also endorse the principles of EQUAL by 2030, a Clean Energy Ministers' campaign of Equal Opportunity, Equal Pay and Equal Leadership"*[i].

The establishment of a Women-in-Energy Program is the first of its kind in Central Asia and considered timely given the significant changes underway in the global energy scene characterized by the transition to cleaner energy systems. The labour force in the sustainable energy sector is projected to grow considerably over the next decade opening new opportunities for women to grow in the sector.

Ultimately, the success of the Women in Energy Program rests on the political will and commitment across the region to advance women contributions to and benefits from the sector. This success includes identifying and placing women centrally in the future energy economy of the region. The intention is to make the principles of EQUAL the modus operandi in the CAREC energy industry by 2030, resolving to making equal opportunity, equal pay, and equal leadership the new standard.

Scope of the Women in Energy Program at a Glance

The Women-in-Energy Program will consist of a general gender-gap statement including current statistics of women's employment in the CAREC energy sector. It will identify the main barriers and reasons for womens' underrepresentation in energy-related professions and contain a 10-year work plan with practical actions that can be supported through the CAREC program to increase qualifications, improve employability and working conditions of women in the energy sector. The Program shall be officially launched at the 1st CAREC Women in Energy Summit in March 2022. One of the first actions foreseen as part of the Program is to provide CAREC women with membership access to selected international networks mandated to advance women's engagement in energy development.

This discussion paper is a preliminary draft of the Women-in-Energy Program and presented for discussion to the CAREC Task Force C on Women Empowerment. **The following questions are envisioned for discussion at the upcoming Task Force meeting:**

1. What is the share of women employed in the energy sector in your country?
2. Which positions do women in energy sector typically work in (administrative, engineering, senior management)?
3. Do you agree with the proposed draft structure of the Women in Energy Program and Work Plan?
4. Can you provide us with a focal contact person in your ministry/organization for further assistance and support?

2 Key Challenges for Women in the CAREC Energy Sector

2.1 Women in the CAREC Energy Sector today (2020/2021)

Gender equality and women's empowerment remain distant goals within the energy sector in all CAREC countries. While some of the countries have enacted legislation (e.g. Uzbekistan, Georgia, Kazakhstan) that nominally mandates non-discriminatory practices in the workplace, the means of enforcement in place and incentives to achieve gender parity need further strengthening. Efforts to encourage a cultural shift and behavioral change to address gender stereotypes will need deliberate support and championing.

Broadly speaking, economic analyses of the energy sector, including those undertaken by international financial institutions and specialist firms, must do more to strategically address gender gaps in their investments.

The sector reveals enormous opportunities to tap into an under-used workforce that has significant potential to contribute to the many aspects of the energy sector through direct employment at all entry points as well as through indirect employment through entrepreneurial activities and as end users. Women have formed successful cooperatives to run local-scale renewable energy operations (in India and in Georgia for example) demonstrating that with deliberate policy and support systems in place, women's employment, leadership, innovation and women-led businesses in the energy sector are all sound investments that can benefit local communities, minimize carbon emissions, and promote sustainable economies.

This section will further include some regional relevant statistics on women in the energy sector. A questionnaire has been formulated in this regard and circulated to the CAREC members. See Annex.

2.2 Main reasons for women's underrepresentation in the energy sector

This section will include an analysis of the main reasons for women's underrepresentation in the energy sector and list the main barriers to enter the workforce or secure leadership positions. A questionnaire has been formulated in this regard and circulated to the CAREC members. See Annex.

2.3 Key Enablers to increase women's visibility in the energy sector

This section will describe the enablers that can unlock women's potential and prepare them to enter the workforce and pursue their chosen professions in this field. These enablers will be centered around four Focus Areas:

1) CORPORATE ENABLERS: industry champions committed to pursuing recruitment practices and establishing quotas and targets to increase women's employment in the immediate term, with a longer-term goal of increasing agency support for women's participation and leadership in the sector

2) EDUCATION ENABLERS: Education and vocational training institutions committed to optimizing the workforce's economic growth/output by breaking down gender stereotypes and increasing the uptake of STEM and related professional training by girls and women interested to enter the energy market as entrepreneurs, employees and decision makers

3) NETWORK ENABLERS: Professional women and men working in the sector, or seeking to work in the sector, who commit to support coalitions/alliances and professional networks that aim to elevate the sector's inclusiveness and advancement of women in the sector

4) POLICY ENABLERS: State policy makers, organizations' HR departments, organized labour representation and other relevant organizations who can enact binding policies that ensure equity of pay and work conditions for women and men

2.4 Country Profiles

2.4.1 Afghanistan

Women are largely underrepresented in the Afghan labor market, with 27% of working-age women economically active, compared with 81% of men (Afghanistan Energy Study: Integrating Gender and Social Dimensions into Energy Interventions in Afghanistan, 2019).

According to an International Labor Organization (ILO) assessment, most women in Afghanistan fail to enter the labor market due to low levels of education and expertise, cultural and social obstacles, domestic responsibilities, shortage of work opportunities, lack of security, limited access to information on the labor market, and lack of legal protection (AHRIC, 2012).

Unsafe working conditions is another problem facing women, and even women who work at state institutions do not enjoy psychological security in their working environment (AHRIC, 2012). Within the paid labor market, Afghan women are primarily employed in manufacturing – mainly the production of carpets and handicrafts (64.4%). Outside of manufacturing, women are employed in the agriculture (33%) and services (9.6%) industries (*The Role of Women in the Economic Development of Afghanistan*, 2019). Afghan women's engagement in the service sector is proportionally distributed between education (33%) and health care (20.6%) (Asia Foundation, 2017). Few women are employed in the construction, engineering, ICT and energy fields as to be statistically irrelevant.

In 2016, the proportion of Afghan women in managerial positions was 4.3%, and only 10.7% of Afghan women's work involved decision-making responsibilities (*The Role of Women in the Economic Development of Afghanistan*, 2019).

Despite the multiple obstacles, conflict, and health crisis, Afghan women entrepreneurs are slowly increasing their share of the local market and rural women are coming together by forming cooperatives to reap higher benefits from working together. While the economic participation of women is still at infancy, the potential for growth and maturity is enormous particularly if specific development intervention targets them. Access to energy is one such intervention that has proven elsewhere to contribute to economic empowerment of women (Gender Assessment Afghanistan Energy Sector, 2020).

With an economy and social structure that are reliant on agriculture, Afghanistan is highly vulnerable to the impact of climate change as farming is weather-dependent. Currently, less than half of the population has access to modern and clean energy and most communities in rural areas are not connected to the electricity grid. The share of energy in the total spending of rural households is as much as 30% of income (Gender Assessment Afghanistan Energy Sector, 2020). In addition, 95% of rural households use traditional biomass fuels (dung, crop residues, wood, charcoal) for cooking so exposure, particularly for women and children, to indoor air pollutants is very high (Gender Assessment Afghanistan Energy Sector, 2020).

While many roadblocks may stand in the way, and contingent on donor support, Afghanistan has an opportunity to create a clean energy system from the ground up as it now builds out a functioning power grid. Moreover, should targeted investments be made to educate and train women and girls, the government would be able to develop an inclusive energy workforce from the start.

According to the World Bank (2017), Afghanistan's national power utility, Da Afghanistan Breshna Sherkat (DABS) has started to make the shift to a more gender inclusive workforce. Of the 7,000 employees working for DABS, only 218 are women, most of whom at a junior support level. However, under a new CEO, DABS management has committed to promoting gender equality. DABS is facilitating access to new job opportunities for women and has taken steps to ensure that women are involved in all business operations within the organization. In 2018, the World Bank Group's International Development Association funded a $60 million grant in support of the Herat Electrification Project to advance DABS' efforts to invest in training, educating and hiring women at all decision-making levels in the energy sector. DABS has also joined the South Asia WePOWER Network as an institutional partner. (WePOWER is a women practitioners' network that encourages women to pursue careers with utilities, energy companies, and energy regulatory bodies throughout the region).

2.4.2 Azerbaijan

As the largest segment of the economy, the energy sector (oil and gas) plays an important role in Azerbaijan's socioeconomic growth, contributing 50% of the country's GDP. Although a significant source of employment, women are underrepresented in energy-related jobs. Women comprise 11.3% of those employed in electricity, gas, and steam production and only 13.8% of those employed in mining. Of all women in the paid workforce in Azerbaijan, 0.7% are employed in the mining sector; 0.5% in utilities; and 1.2% in construction (The State Statistical Committee of the Republic of Azerbaijan, 2020). For context, the majority of women in the paid workforce (40%) work in the agricultural sector.

Education patterns show that this situation is unlikely to change soon. Women represent 13% of those studying in the energy field and in energy-machine building in vocational education, and 10% of those enrolled in the exploration and extraction of minerals. At university level, women are just over a quarter of those studying in technical and technological fields that could potentially lead to energy-related professions.

Given the significance of the energy sector in Azerbaijan's economy, women would benefit if they are employed in this high-paying sector, particularly those who live in areas where energy-related businesses are the main employers. In communities that depend on energy sector jobs, women risk becoming increasingly dependent on the male members of their family, with even more limited opportunities for employment. Studies on gendered dimensions of women's participation in the oil and gas sector determined that employment was an emotive issue with marked gendered dimensions. Men expressed a strong affinity to cultural ideals of masculinity defining the husband and father as a provider,

breadwinner, and unquestioned authority figure in the household. High male unemployment in areas around the oil terminal was experienced as emasculation, loss of status and shame/anger (Extracting Lessons on Gender in the Oil and Gas Sector, 2013).

The subject of female employment was met with hostility or rejection by many men, or explained as an indication of the husband's failure to provide. Women themselves appeared divided between a desire to gain more autonomy through employment, and their allegiance to perpetuate the "feminine" behaviors expected in Azeri society, including subservience to male authorities, and the role of homemaker (Extracting Lessons on Gender in the Oil and Gas Sector, 2013).

At the same time, climate-induced disasters are causing water scarcity, soil degradation, salinization, rising temperatures, sea level fluctuation, and other conditions that are expected to worsen with climate change. Floods, landslides, and earthquakes are the most frequent sudden-onset weather events and have begun to catalyze internal migration among rural populations.

In response to the impacts of climate change, and to align with the SDGs, Azerbaijan released a National Strategy on the Use of Alternative and Renewable Energy Sources for the period 2012–2020. The strategy targets (i) reducing greenhouse gas emissions by 20% from 1990 levels, (ii) increasing the share of renewable energies in energy consumption by up to 20%, and (iii) increasing energy efficiency by 20% by 2020.

To realize these goals, Azerbaijan will need to start shifting priorities, investment, and human capital from oil and gas to renewable energy sources and infrastructure. A political decision to prioritize investment in the renewable energy sector provides opportunity to implement a gender-inclusive employment strategy in the energy sector through both direct and indirect jobs. Education and training will also require political and budgetary prioritization and opens another point of entry to incentivize gender inclusivity.

2.4.3 Georgia

In 2017, 58% of women were considered economically active compared to 75% of men. Women in the workforce typically occupy lower-level support positions. The sectors with highest levels of female employment are in teaching, social services and healthcare fields, while men predominate in management-level positions in government and the private sector, especially in the energy, information technology and construction sectors.

Women account for approximately 75% of employees in the health care and social sectors, 60% of employees in the hospitality sector, and 84% of school teachers. Women make up less than 10% of the workforce employed in construction, and 23% of the workforce employed in the transportation and communications sectors. Women's engagement in ICT is low despite this being a growing field and potential source of well-paid employment. The disparity between men and women working in the ICT sector is largely due to cultural stereotypes.

While country-wide statistics on women's participation in the energy sector in Georgia is unavailable, a recent report (USAID 2019) provides gender-disaggregated data among the workforce employed at Energo-Pro, the largest electricity distribution company in the Republic of Georgia.

Serving over one million customers, Energo-Pro is the country's largest employer. With a workforce of 6,000 employees, women make up less than 13% of the company's employees. Most women employed at Energo-Pro work in middle management positions (nearly 19% of total middle management). Less than

3% of line worker positions are held by women, and only around 8% of engineers are female (Engendering Utilities Partner Profile Energo-Pro, Georgia, USAID, 2019).

In general, occupations in Georgia are segregated by gender, with a much higher share of men in stereotypically male professions, such as engineering, construction, energy, transport and communications, gas, and water supply. The majority of women are employed in jobs with a caring or service dimension. Women account for around 75% of employees in the health care and social sectors, 60% in the hospitality sector, and 84% of school teachers. Fewer than 10% of women work in construction, while 23% are employed in transport and communications. Many women also work in the informal sector and in unpaid subsistence farm work (Georgia Country Assessment, 2018).

In signing the EU Association Agreement, Georgia is required to align its legislation with EU directives, including compliance with environmental protection and sustainable development imperatives. As Georgia initiates plans to incorporate SDGs into economic planning, this may be a point of entry to engage women at the ground level in decision making, planning, logistics, etc. within the conventional energy sector and the renewable energy sector. Furthermore, the greening of Georgia's energy industry, presents an area where the State can implement meaningful engagement strategies to encourage keeping girls in school and advancing their participation in the STEM subjects in addition to offering employment opportunities at managerial and senior levels upon entering the workforce.

2.4.4 Kazakhstan

The *Comprehensive Review of the Beijing Declaration and Platform for Action (1995) Implementation Progress* (2019) submitted by the Republic of Kazakhstan highlights the "Energy of the Future" EXPO-2017 and the International Center for Green Technologies and Investment Projects Development "Future Energy," established with UN assistance.

The Women for Energy of the Future International Forum in August 2017 spotlighted women-led programs and projects on environmental sustainability, a green economy and alternative energy sources, and climate resilience and climate change mitigation efforts. (Under its GHG reduction policy, in 2015 Kazakhstan is committed to lowering GHG emissions by 15% by 2030 against the 1990 national emissions levels.)

The International Center for Green Technologies and Investment Projects Development "Future Energy" oversees and/or supports regional projects in Central Asian countries including the Republic of Uzbekistan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, as well as Iran, Afghanistan, Mongolia and Azerbaijan. Moreover, under the 2013–2020 National Concept on Transition to Green Economy, Kazakhstan has launched projects in partnership with non-governmental and international organizations and with financial support from international financial institutions.

The United Nations Development Program (UNDP) has assisted Kazakhstan with a portfolio of projects designed to address climate change resilience and climate change mitigation. Gender equality is incorporated into project design and activities both at the governance level and in implementation. Projects are developed to initiate green practices in the following areas: public utilities, agriculture, and renewable energy through hydroelectricity with the participation of women living in rural areas.
As part of the UNDP energy efficiency project portfolio, the Ministry of Energy in collaboration with the German Society for International Cooperation conducted an extensive review, "Promoting clean and affordable energy for empowerment of women and girls in Kazakhstan and Central Asia." The review generated gender-sensitive policy recommendations to ensure gender equality in access to sustainable

energy, greater participation in problem solving, and providing employment/career opportunities for women in the energy sector.

Country-wide, women account for 24% of all employees in the oil and gas subsector, 25% in the electric utility subsector, 26% in coal mining, and 17% in renewables (The Role of Women in the Energy Sector in Kazakhstan; European Bank for Reconstruction and Development, 2020).

Women earn on average 77% of men's total pay in non-management business and administration roles, and just 59% of men's total pay in technical / operational roles (The Role of Women in the Energy Sector in Kazakhstan; European Bank for Reconstruction and Development, 2020).

In 2020, the European Bank for Reconstruction and Development released a detailed labour survey covering the period 2016-2019, on the role of women in the energy sector in Kazakhstan. Researchers worked with 35 companies that, combined, provided information on more than 55,000 workers in each data year and all subnational regions. While the number of male employees remained relatively stable over the course of the study period, the number of women employed in the sector declined by 14.3%, a net loss of 2,174 female employees. Moreover, less than 12% of all women in the sample were employed at the management level, whereas 16% of male employees were in management roles. Women's share of employment was also lowest among older workers. This is noteworthy as senior managers are typically drawn from this experienced employee cohort.

The report notes that certain regulations prohibit women's employment in 212 occupations and/or types of work, including a significant number of professions relevant for the energy sector turnover rates for women were consistently higher than the rates for men, suggesting that efforts to increase women's representation in leadership roles will need to focus on retaining and rewarding experienced women at the mid- and late-career stage (The Role of Women in the Energy Sector in Kazakhstan; European Bank for Reconstruction and Development, 2020).

National survey data indicate that women account for approximately 30% of all direct employees in the electricity, gas, and steam subsector, and just 20% of employees in oil and gas production (The Role of Women in the Energy Sector in Kazakhstan; European Bank for Reconstruction and Development, 2020). Women account for approximately 25% of the total workforce in the energy sector, with little indication of significant positive change in recent years. The level of women's participation is very similar across energy sub-sectors (The Role of Women in the Energy Sector in Kazakhstan; European Bank for Reconstruction and Development, 2020).

A deeper assessment of the gender divide within the energy sector reveals that women's share of senior manager roles is 12% and women account for 17% of Board members. Women's share of employment declines progressively from non-management roles (26%), through mid-level management positions (20%), to senior management (12%), indicating persistent underutilization of women's potential. Across the 35 companies with independent senior management teams, women held just 50 out of a total of 414 (12%) senior manager positions. A total of 14 of the 35 companies have no women at all among their senior managers (The Role of Women in the Energy Sector in Kazakhstan; European Bank for Reconstruction and Development, 2020).

2.4.5 Kyrgyz Republic

Within the Kyrgyz Republic, highly paid technical sectors are dominated by men. Men account for 84.4% of employees in the mining industry; 90.5% in the production of gas, electricity, and water; 89.3% in the transport and communication sector; and 96.5 in the building industry (Kyrgyz Republic Country Gender Assessment, 2019).

In contrast, women predominate in the health and social services sector (constituting 83.6% of the labour force); education (80.6%); and hotels and restaurants (58.4%). The predominance of women in lower-paid sectors is reflected in the considerable gender wage differential, with women receiving on average just 74.3% of men's earnings in 2012, and 75.3% in 2016 (Kyrgyz Republic Country Gender Assessment, 2019).

Gender equality global reports from 2017–2018 indicate a dramatic downward trend in gender equality and women's empowerment in the Kyrgyz Republic. In the 2017 World Economic Forum Global Gender Gap Index (GGGI) the Republic ranked 85th of 144 countries, falling from an overall GGGI ranking of 52 in 2006 (Kyrgyz Republic Country Gender Assessment, 2019).

There are positive examples of progress made in energy efficiency and renewable energy initiatives. One is the Sustainable Energy Solutions for Rural Communities under the UNDP "Jashyl Ayil" Initiative project (2015-2018); another is UNISON Group's projects aimed at increasing energy efficiency with a focus on gender-specific needs.

In both instances, however, it appears that the goal is to reduce the burden of housework on women rather than open points of entry for women's gainful employment in the energy sector. Collecting fuel (dry manure) to heat the home and cook are mainly the responsibilities of women and girls. Especially during winter, women and girls spend a great deal of time on heating the home, cooking, and laundry, with little time left over for other activities such as schooling or paid work outside the home. Energy-saving technologies are a means of reducing the time spent on these tasks.

Gender differences exist within the formal education sector in the areas of energy and infrastructure. In the informal education sector, international and civil society organizations currently play an important role in the professional development of women, including initiatives that provide training for women in energy-saving resource management technologies.

Working with independent/nonprofit organizations may present points of entry to prepare women for career opportunities in the energy sector, particularly the renewable energy sector, aligning both with the SDGs and with Kyrgyzstan's National Action Plan for a Green Economy 2019-2023. Another promising avenue is offering support to implement recommendations made by gender experts on ways to achieve gender equality in the energy, agriculture, tourism, waste management and chemical risk mitigation sectors as part of the Programme for the Development of a Green Economy. In addition, Kyrgyzstan opened an IT academy with support from the Soros Foundation-Kyrgyzstan and Asian Development Bank with the goal of expanding economic opportunities for girls and women through training in practical skills in IT. Such training will potentially serve women well in opening career paths in the energy sector and related fields.

2.4.6 Pakistan

Women play a small role in the paid work force relative to men, constituting roughly 51% of the population, but only 22.7% of the (paid) labour force. The disparities in education restrict women's access to information and entrepreneurial activities, financial management and record keeping. Most women entrepreneurs do not have access to information pertaining to markets, business plans, marketing and relevant legal frameworks.

The Arab News reports that only 4% of professionals in Pakistan's power sector are women. Out of 61,672 people employed in the country's nine power companies, only 2,494 were women (Arab News, 2019). The total number of engineers was calculated at 10,635 of which 437 are female engineers, making about 4% in all of the nine utilities (Pakistani Women in Energy — Joyful Defiance of Male-Dominated Workplaces, 2019).

The percentage of female participation is lowest at the Senior Executive Levels (average 2.5%), and highest at the Junior Executive Levels (average 5.6%). Comparatively, 14% of the engineering graduates from the University of Engineering and Technology (UET-Lahore) are women. (Women at the Forefront of the Clean Energy Future, USAID. 2014)

The number of women registered with vocational and ICT education is considerably less than men. Only 11% of women receive technical education compared to 32% of men. In response, the Government of Pakistan has launched specialized programs for girls in the field of ICT such as "ICT for Girls" in collaboration with Microsoft. The government has also introduced regulations to advance equal pay, retention and career advancement of women within the media and ICT fields.

2.4.7 Tajikistan

The Republic of Tajikistan has established four national strategic development goals for 2030 one of which is ensuring energy security and efficient use of electricity. Most recent data shows that in the mining and quarrying sectors, 9,800 men are employed vs 1,600 women. In the electricity, gas and water supply sectors, 14,500 men are employed vs 2,300 women. (Report of the Implementation of the Beijing Declaration and Platform for Action, 2019).

Conversely, women are overwhelmingly represented in the education sector presumably as teachers. As noted in the report, educators' salaries remain very low in comparison to other civil servants or to industrial and service sector employees.

Women-led enterprises traditionally exist in low productivity sectors such as sales (45%), services (25%) and agriculture (19%). However, in recent years, women's entrepreneurship started developing in such areas as construction, transport and logistics, information technologies, healthcare, tourism, finance and the manufacturing industry.

The lack of comprehensive gender-disaggregated data of women in the workforce and within sector-specific positions makes it difficult to determine a baseline for women participating in the paid workforce. Even time use surveys contain minimal information concerning women's domestic activities in energy-poor households (Tajikistan: Country Gender Assessment, for ADB. 2016).

The economic value of women's unpaid labor in the gathering and processing of solid fuels has also not been calculated. Sector assessments tend to focus on technical insufficiencies and measure quantifiable energy outputs, but overlook gender-specific project impacts, especially in terms of renewable energy.

While current data is unavailable for the representation of women in energy companies, the average number of men employed in electricity, gas, and water supply appears to be more than five times higher than the average number of women (Tajikistan: Country Gender Assessment, for ADB. 2016).

2.4.8 Turkmenistan

On November 17, 2017, the President of Turkmenistan approved the Plan of Action for the Implementation of the Sustainable Development Goals in Turkmenistan (2019 Comprehensive National Review of the Implementation of the Beijing Declaration and Platform for Action in 1995).

Energy exports make up at least 25% of Turkmenistan's GDP – 80% of the exports destined for China (WRI, 2016). Energy production is dominated by natural gas and oil. A study by the European Bank notes that significant CO2 emissions reductions could be achieved by reducing energy losses in electricity and gas networks and by investing in solar and wind, which has high potential as a viable and consistent energy source given Turkmenistan's topography yet has close to no share in electricity production (European Bank for Reconstruction and Development Turkmenistan Diagnostic, 2019).
With its dry climate, Turkmenistan is especially vulnerable to the impacts of climate change, with a rate of warming much higher than the global average and projected to intensify after 2040. Calculations show the rise of temperature from 2-3°C to 6-7°C by 2100, accompanied by decreased rainfall, which will lead to further desertification, heat waves and extreme droughts (European Bank for Reconstruction and Development Turkmenistan Diagnostic, 2019).

Reducing economic dependence on oil and gas as well as prioritizing green energy sources that can supply the grid would be to Turkmenistan's advantage. The country's terrain is vulnerable to desertification which will only worsen with climate change. Deserts occupy 80% of the territory of Turkmenistan, and both cultivated and uncultivated lands are subject to various degrees of desertification. As a result of desertification processes and pollution, biological productivity of Turkmenistan's ecosystems has declined by 30% to 50% in recent decades (Azernews, 2017).

It is not apparent what, if any, strategies are in place or even in the planning process to implement a gender-inclusive workforce in the energy sector or in related sectors. Despite the challenge of having little data to inform sound decision-making, supporting Turkmenistan to operationalize its public commitment to the SDGs, with a focus on SDGs #5 and #7, could be a viable point of entry into the sector with significant benefits to the local economy, environment, and gender equality.

2.4.9 Uzbekistan

Men represent over 94.2% of the formally employed workers in the construction industry and 92.8% in transportation, information and communications. Women constitute 76.6% of the total workforce in healthcare, social security and sports, and 75.6% of workers in education, culture, arts and science. In agriculture, forestry and fisheries, women account for 44.3% of the labour force.

As of May 2020, there were 538 staff in the Ministry of Energy, including subsidiaries, of which 8.2% were women and 91.8% were men. The presence of women is highest (19%) in the Nuclear Development Agency, and representation is lowest, at less than 1%, in the Inspectorate for the Control of the Use of Petroleum Products and Gas (Uzbekistan: Power Sector Reform Program, 2020).

Female representation in the newly established Ministry of Energy is 14.5%. As women are underrepresented as energy professionals and STEM students, it is not surprising that representation of

women holding decision-making positions in the energy sector is also low. Women among top and mid-level managers in the Ministry of Energy represent less than 1%. Working in technical functions in the energy sector requires a qualification in a STEM subject—14.6% of women in STEM education are employed by the Ministry of Energy. The Ministry of Energy lacks gender-specific indicators for reviewing, monitoring, evaluating, and reporting the progress on gender-related issues (Uzbekistan: Power Sector Reform Program, 2020).

Worth noting is that the government has increased its focus on the energy sector. Planned activities include the construction of 42 new hydroelectric power stations. However, the impact on women is understood as relieving some of the difficulties associated with the unpaid labour of housekeeping and childcare. "A steady supply of electricity eases women's ability to manage her time between bathing children, washing, cooking and other household responsibilities, as well as income generation activities." According to World Bank data (2019), Uzbekistan's economy is one of the world's most carbon intensive countries, with electricity generation, heat supply, and buildings as main contributors of energy losses. Half of all energy-related greenhouse gas emissions—approximately 80 million tonnes of carbon dioxide annually—are generated by buildings, many of which are residential. According to anticipated population and economic growth rates, residential energy consumption and carbon emissions are estimated to rise by 30% by 2050 (Uzbekistan: Power Sector Reform Program, 2020).

A shift to renewable energy sources presents an opportunity to align with the UN SDG goals, including SDG#5, to simultaneously minimize the carbon footprint of the energy sector and create a more gender-inclusive workforce.

This presents potential multiple points of entry into the energy sector to include women at all hiring levels and through direct and indirect employment opportunities.

3 CAREC Women-in-Energy Workplan 2030

The CAREC Women-in-Energy Workplan 2030 aims to reduce some of the barriers women face in the CAREC energy sector through practical actions that have a reasonable prospect of being financed by the CAREC program going forward. The following table shall give an impression of the format of the workplan and some examples as to the suggested workplan format of activities. The focus areas are closely related to the earlier identified enablers to increase women's visibility in the energy sector.

Activities	Targets/Indicators	Responsibility	Time Frame
Focus Area 1: Increase employability of women in the energy sector			
example: CAREC to provide secondment opportunities for women to progressive international energy companies			
example: CAREC to provide capacity building for CV writing and job interview preparation			
Focus Area 2: Boost women's education in key fields for the energy sector			
example: CAREC to provide scholarships for trainings and certifications at international centers of excellence			
Focus Area 3: Support visibility of CAREC women internationally			
example: CAREC to organize regular Women-in-Energy Summits			
example: CAREC to provide memberships to existing international women-in-energy networks			
example: CAREC to propose Central Asian women presenters at international energy conferences and fora			
Focus Area 4: Enhance organizational capacity in designing gender friendly policies and workplaces			
example: CAREC to provide knowledge and templates for HR policies such as quota			

systems or other to SOEs (spell out), Ministries and private energy companies			

4 Early Implementation Actions

The first actions envisioned to be implemented as part of the Women in Energy Program and 2030 Work Plan are the organization of the 1st Women in Energy Summit in March 2022 and access through formal membership to an existing international energy networks for women.

The agenda and format of the Women-in-Energy Summit is work in progress and will be designed in collaboration with stakeholders once the Draft CAREC Women-in-Energy Program has reached a more mature stage. Similarly, the negotiations with a suitable international Women-in-Energy network to achieve access for Central Asian women will take place over the next months.

5 Annexes

5.1 Questionnaire

CAREC Women in Energy Program Questionnaire

Globally, women account for less than one-third of global employment in the energy sector. This trend is also visible in the CAREC countries where numbers are estimated to be significantly lower than the global average. In a historic declaration adopted in Tashkent in 2019, the Energy Ministers of the CAREC countries committed to increasing gender equity by 2030. To this end, the CAREC program is now developing the region's first CAREC Women-in-Energy Program for which it needs to collect basic data from the member countries.

Representatives of the public sector, private sector, industry associations as well as individuals are invited to submit their responses. All responses will be kept confidential.

Deadline: **31 May 2021**

The questionnaire can be filled in online.

Alternatively, respondents can fill this form and send their responses to

- Ms. Nidhi Tandon: nidhi.tandon@rogers.com
- Mr. Chirag Gupta: cgupta.contractor@adb.org

Structure of the Questionnaire

- Section 1: Respondent Data
- Section 2: Gender Policies at Organization Level
- Section 3: Women's Professional Advancement and Employability

1 SECTION 1 –Respondent Data

Name of Organization:	
City/Country:	
Position of the Respondent:	
Male / Female:	
Email:	

2 SECTION 2 – Gender Policies at Organizational Level

1) What is the approximate share of women in your organization? (in %)
2) Do you have women in top leadership positions in your organization, e.g., as CEO, President of the organization, Board of Directors, Ministers or Deputy Ministers? Yes/No
If yes, please specify:
3) Does your organization have special recruitment targets to increase the share of women in the organization (quotas or other)? Yes/No
If yes, please specify:
4) Does your organization have a gender non-discrimination policy? Yes/No

If yes: a) Does your organization have a gender focal point? Yes/No b) Does your organization offer anti-harassment/anti-discrimination training? Yes/No
5) Does your organization have official policies for employees to take maternity leave? Yes/No
If yes: a) is the maternity leave duration sufficient in your view? Yes/No b) is there a paternity leave? Yes/No
6) Are child-care facilities available at your organization? Yes/No
If no, is monetary assistance provided for external childcare facilities? Yes/No
7) Does your organization have an official policy for staff to take paid family and medical leave? Yes/No
If yes: a) How long is the paid leave? b) Is the paid family and medical leave sufficient in your view? Yes/No
8) Does your organization allow flexibility in the start and end times of the working day? Yes/No
9) Does your organization provide regular training or upskilling programs? Yes/No

If yes, are these trainings usually attended by women? Yes/No	
If no, why? (multiple answers are possible, please check):	
a. *The content of the trainings is not relevant for the jobs that women have in the organization*	
b. *The trainings require travel abroad which makes it difficult for women to attend*	
c. *Other reasons, please specify*	
10) Does your organization offer scholarships for additional academic degrees or certification? Yes/No	
If yes, in which fields of study are these degrees or certifications offered?	
11) Does your organization collaborate with universities or other educational institutions and offer internships, apprenticeships or jobs to fresh graduates? Yes/No	
If yes, from which university faculties or educational fields?	

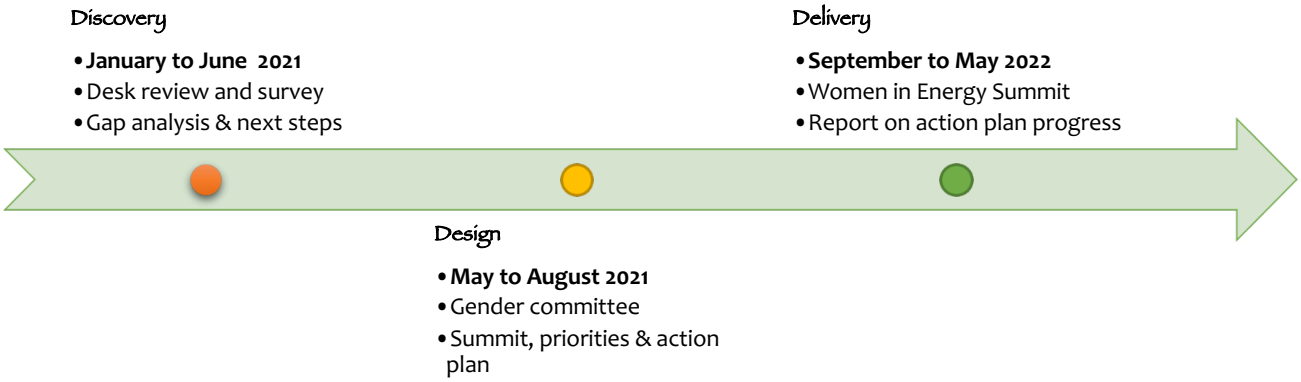
3 SECTION 3 – Women's Professional Advancement and Employability

12) In your opinion, what is the main reason why women are underrepresented in the energy sector? (multiple answers are possible, please check):	
a. *lack of education*	
b. *lack of professional experience*	
c. *difficulty to combine childcare and work hours*	
d. *lack of flexible employment models, e.g., part time, work from home, etc.*	
e. *lack of equal opportunity to reach management positions*	
f. *no permission from family to work/social pressure*	
g. *salary inequality*	
h. *Other reasons, please describe*	
13) Are there roles in the energy sector that are best filled by either men or women in your opinion? If yes, which roles and why?	
14) Do you feel that in your country there is more gender equality today than 20-30 years ago? Yes/No	
If yes, what has changed for women to be better?	
If no, is the situation today worse than in the past and if so, why?	
15) Do you believe the transition to cleaner energy systems (renewable energy, more efficient electricity and gas infrastructure) may provide new job and career opportunities for women in your country? Yes/No	

Description (optional)

3.1 Sequence and steps in framing the Women in Energy program

To design a realistic and evidence-based Women in Energy program, an initial 'discovery phase' is underway to review literature, collect data and perspectives from key stakeholders. (A summary gender gap and data analysis of women's formal employment in the region accompanies this note).



The findings from the 'discovery phase' will be framed from two perspectives; it (i) provides a status report presented as key findings and (ii) offers recommendations and resources with an eye to the future of women in energy. The status report, based on available data collected from survey responses, will:

- recommend ways of diminishing barriers and strengthening enablers,
- suggest an 'ambition scale' of best practices and effective strategies in securing women's employment and leadership in the energy sector,
- provide, where practical, examples against which to compare.

(Refer to Annex Table 1 for sample gender indicators).

DEFINITIONS:
Barrier = something blocks or prevents your desired goal (Equitable employment for women in sustainable energy)
Enabler = something that facilitates or promotes your desired goal (Equitable employment for women in sustainable energy)
Solution = deconstruct the barrier & promote the enabler to achieve the goal – practical actions.

Source: *Women for Sustainable Energy: Strategies to Foster Women's Talent for Transformational Change"* by the Global Women's Network for the Energy Transition

From May to August 2021, working closely with the Gender Committee, a work plan will be developed with specific actions to be carried out by CAREC to increase qualification of women, improve their working conditions and other beneficial measures; and advance women's participation in governance and leadership. A draft implementation schedule will also be developed as part of the work plan.

[i] Energy Ministers dialogue Central Asia Regional Economic Cooperation Tashkent, Uzbekistan 20 September 2019 Declaration
https://www.adb.org/sites/default/files/related/155221/CAREC%20Energy%20Ministers%20Dialogue%20Declaration%20002.pdf