



Toward More and Better Jobs for Women in Energy

An assessment undertaken to guide the new Regional Network in Energy for Women—RENEW

Elisabeth Maier, Samantha Constant, and Ali Ahmad



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Acronyms and Abbreviations

DISCO	distribution company
EDL	Lebanon's power utility (Electricité du Liban)
GCC	Gulf Cooperation Council
GDP	gross domestic product
ICT	information and communication technology
IRENA	International Renewable Energy Agency
ISIC	International Standard Industrial Classification
ILO	International Labour Organization
LFS	labor force survey
LFPR	labor force participation rate
MENA	Middle East and North Africa
NEEN	Nordic Energy Equality Network
NEPCO	National Electric Power Company
OECD	Organisation for Economic Co-operation and Development
PENRA	Palestinian Energy and Natural Resources Authority
PV	photovoltaic
RENEW	Regional Network in Energy for Women
STEM	science, technology, engineering, and mathematics
UNESCO	United Nations Educational, Scientific and Cultural Organization
WDI	World Development Indicators

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Executive Summary

This regional assessment provides a cross-country snapshot of the status of women in the energy sector of the Middle East and North Africa (MENA). It reviews the constraints and opportunities women face in access to energy jobs, career decision-making, and professional development. The assessment was prepared for a wide audience of stakeholders that includes public and private agencies, utilities, energy companies, academic institutions, nongovernmental organizations, associations, and civil society networks focused on advancing gender equality and diversity in the energy workforce. It aims to provide an analytical reference to underpin the call to boost women's status in the sector. Next steps toward collaboration and collective action are proposed.


The assessment is based on the following: (1) a desk review of secondary sources, to shed light on the status of women and gendered realities in the countries under study; (2) a quantitative analysis of key employment data from labor force surveys in selected countries, depending on availability, with data disaggregated whenever possible by type of position and category of work; (3) focus group discussions with educators and gender champions in the Arab Republic of Egypt; and (4) semi-structured interviews with selected gender champions working in the sector, private sector players, and civil society organizations. The economies assessed were Algeria, Bahrain, Djibouti, the Arab Republic of Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, the United Arab Emirates, West Bank and Gaza, and Yemen.

In many MENA countries women's representation in the energy sector is below 15 percent—much lower than the global average of 22 percent. However, findings reveal variations by country. A combination of factors contributes to poor labor

market outcomes and limited entrepreneurship among women in the region:

- Women's lack of access to education and equal opportunities for skills development.
- Limited guidance for young women in the public education system, which hampers their transition from education in the science, technology, engineering, and mathematics (STEM) fields to work opportunities.
- A lack of jobs and a skills mismatch attributed to the disconnect between what is taught and what employers need.
- Recruitment opportunities that are largely centralized and do not target women.
- Lack of role models and access to career advice in the workforce.
- Legal restrictions that reinforce gender stereotypes in the sector and occupational segregation.
- Difficulties in women's advancement owing to biases, inequitable workplace conditions, and pervasive wage inequality.
- Concerns surrounding safe mobility for women, particularly while traveling for on-site work.
- Social and normative constraints that women face because of deeply entrenched patriarchal belief systems that hinder their success in the sector.

The dynamic transition toward renewable energy in many MENA countries offers an opportunity for more women to be employed in sustainable



and highly productive jobs that will change the face of the region. Some MENA countries are among the most highly dependent on oil and gas in the world. For example, in most member countries of the Gulf Cooperation Council, oil and gas accounts for more than 20 percent of gross domestic product and at least 50 percent of state revenues (World Bank 2019; IMF 2016). Therefore, the energy transition poses significant macroeconomic risks that will percolate into labor markets and household welfare.

This reality has led regional governments to place greater emphasis on economic diversification. The energy sector occupies a central role in these diversification plans because of its multidimensional connections to local development, the region's vast natural resource potential, and the need to sustainably meet the growing demand for energy. Diversifying the energy sector's value chain in MENA opens the door to leveraging this structural transformation to address the severe underrepresentation of women in the energy workforce. However, there is a need to first understand the status of women's employment in the sector, the obstacles that women face in entering and advancing in it, and how existing policy affects their participation in the sector.

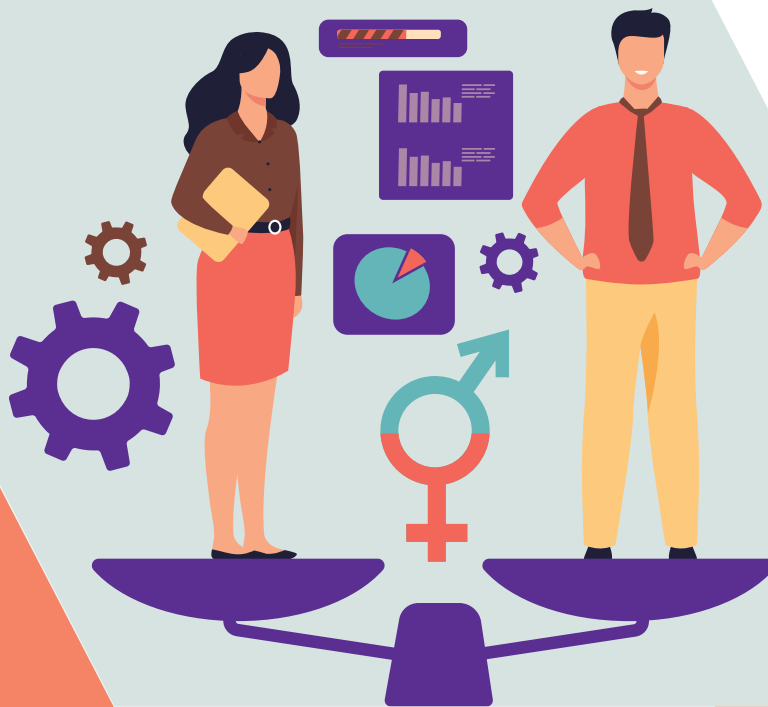
Learning from similar networks that support women in energy around the world, a coalition of local, regional and international partners, among them the World Bank, plan to establish RENEW-MENA. Drawing from the Bank's WePOWER

experience in South Asia, the goal of RENEW-MENA is to boost women's representation and status in the energy sector across the region.

The main objectives of RENEW-MENA are to:

- Increase women's economic participation across the energy sector value chain, specifically in jobs related to the clean energy transition.
- Encourage better workplace conditions for women in both the private and public sectors.
- Combat widespread gender stereotypes about women's role in STEM fields and increase their visibility in the energy sector.

Achieving those objectives will require partnerships with the private sector, engagement with utilities, innovative programming and capacity building for individual and institutional members, and knowledge sharing at the country and regional levels. In collaboration with similar networks from around the world, RENEW-MENA will engage with government utilities and agencies, private firms, development partners and donors, academic institutions, and community-based organizations to meet objectives through innovative analytical work, direct support for operations and client engagement, and capacity building. In this way, methods that have successfully advanced women's participation in the energy sector globally can be adapted to countries of the Middle East and North Africa.

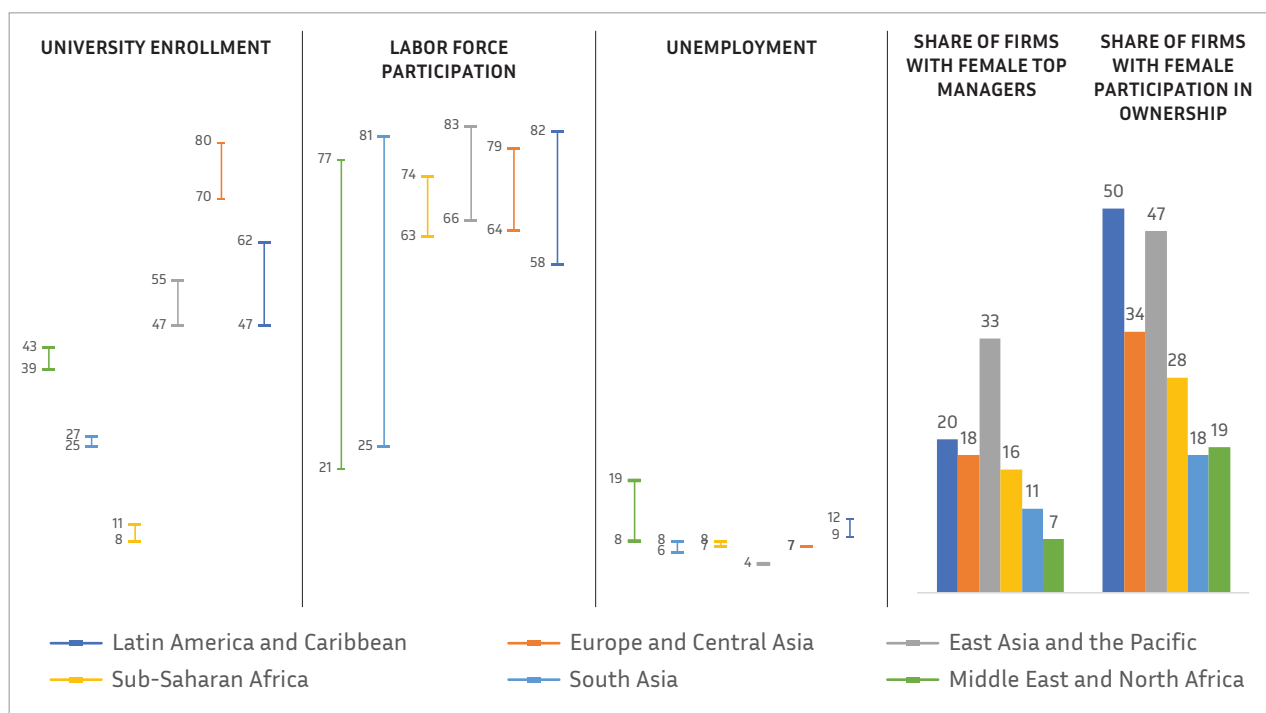


1 Overview

1.1 GENDER EQUALITY IN THE MIDDLE EAST AND NORTH AFRICA

Gender inequality in the Middle East and North Africa (MENA) region is a pressing challenge constraining the region's human, social, and economic development. Despite the significant progress made in closing the gender gap in the areas of education (especially university enrollment) and health, stark disparities remain in women's access to economic opportunities (such as employment and entrepreneurship),

Figure 1.1 Relevant gender gaps in MENA, compared with other regions



Source: World Development Indicators (WDI), latest available data (accessed March 2022).

Note: Men’s labor force participation rates are unequivocally higher than women’s across all regions, with women’s unemployment rates being higher or close to men’s rates in all regions except East Asia and the Pacific. On the contrary, women show higher university enrollment rates than men across all regions but Sub-Saharan Africa.

and in their voice and agency (World Bank 2017). According to global indicators, the region’s key labor market and enterprise metrics show the widest gender gaps (figure 1.1), and its performance on economic indicators lags far behind that of most regions (except for South Asia on some metrics).

Addressing gender inequalities in MENA’s labor markets could boost the region’s economic welfare and growth outlook. According to research from the International Monetary Fund, the region, given its wide gender disparities, could benefit greatly from bridging gender gaps in the labor market. This would increase the region’s

gross domestic product (GDP) by more than 20 percent (Dabla-Norris and Kochhar 2019), mainly driven by the addition of female workers to the labor force and the impact of gender diversity on productivity. Among several published studies, the Organisation for Economic Co-operation and Development (OECD 2017) estimated that the exclusion of women costs the region around US\$575 billion per year. Along the same lines, a McKinsey analysis stated that if all MENA countries followed a realistic “best-in-region” scenario, the region could add as much as US\$400 billion to its GDP by 2025, equivalent to a 10 percent increase (McKinsey & Company 2019).

The energy transition and green solutions are drivers of job growth; in MENA, it is imperative that they include women and youth across different population groups to promote equality and maximize impact. The clean energy transition is “instrumental for green growth across MENA that would allow countries to meet the region’s growing energy demand, diversify the energy mix, promote equitable socio-economic development, build climate change resilience, and create much-needed jobs for the region” (World Bank 2021a). Using the Clean Energy Employment Assessment Tool to evaluate the impact of the development of the five technology pathways, a recent study determined that from the lowest to the highest scenarios, net jobs would increase by 1.4 to 3.8 million, respectively, in Egypt alone over the period 2020–50 (World Bank 2021).¹ However, these estimations do not provide a gender lens. If we assume a scenario where the participation of women in these jobs is equivalent to that of the latest (2020) female labor force participation rate (LFPR) of around 15 percent, the number of women that can join Egypt’s clean energy transition would range between 0.21 and 0.57 million.²

To close gender-related knowledge gaps and support actions to promote the inclusion of women, this assessment provides a data-driven backdrop of women’s status in the sector. The first chapter introduces gender inequality and presents the methodology, with additional details available in Appendix A. The second chapter presents a broad overview of women in the labor market, including gender differentials that put women at a disadvantage in labor force participation, employment, and entrepreneurship. The third chapter discusses trends in education-to-work transitions

pertaining to the energy sector, as well as, more broadly, in the science, technology, engineering, and mathematics (STEM) fields. It also analyzes the structural and normative constraints, based on an extensive literature review validated through field consultations and interviews. The fourth chapter dives deep into women’s employment and economic participation in power utilities (the traditional sector) and renewables (key to the clean energy transition), based on new data generated through this assessment or existing data in secondary sources (if data could not be collected from primary sources or were not available). The fifth chapter discusses lessons learned, with key observations on overcoming obstacles to women’s labor force participation. The final chapter is forward looking and concludes with recommendations on tactical next steps to boost women’s economic participation in the energy sector.

1.2 METHODOLOGY

This regional assessment aims to (1) better understand women’s different roles and participation in the energy sector as well as their transition from school to the workplace; (2) contribute to the availability of empirical evidence on the status of women’s employment in the energy sector; and (3) underpin recommendations and actions proposed to be implemented by the Regional Network in Energy for Women (RENEW).³ Specifically, its aims to provide a regional snapshot of the underlying constraints and new opportunities that women face in terms of career decision-making, skill-building opportunities, access to energy jobs, and professional development in the workplace.

1 Technology pathways in energy transitions include the following development areas: solar photovoltaic, wind energy, hydropower, solar heating/cooling, and concentrated solar-thermal power.

2 All job numbers cited in this report are direct jobs, unless mentioned otherwise. These jobs are distributed across the entire value chain of the subsectors considered (renewables, oil and gas, etc.). For details about specific numbers, please refer to the references.

3 RENEW is described in detail in chapter 4.

Net jobs would increase by 1.4 to 3.8 million, respectively, in Egypt alone over the period 2020–50.

The findings will not only help to quantify gender disparities in the regional energy space but also inform possible interventions to address them.

Data were collected using mixed methods (see Appendix A) and limited to certain countries.

The assessment covers microdata analysis of labor force surveys combined with interviews and focus group discussions with the government, the private sector, academia, and nongovernmental agencies working in the field. While data on general education and the labor market cover the entire region, country-level data related to the energy sector are limited to Algeria, Egypt, Iraq, Jordan, Kuwait, Oman, Lebanon, Qatar, Saudi Arabia, and West Bank and Gaza.⁴

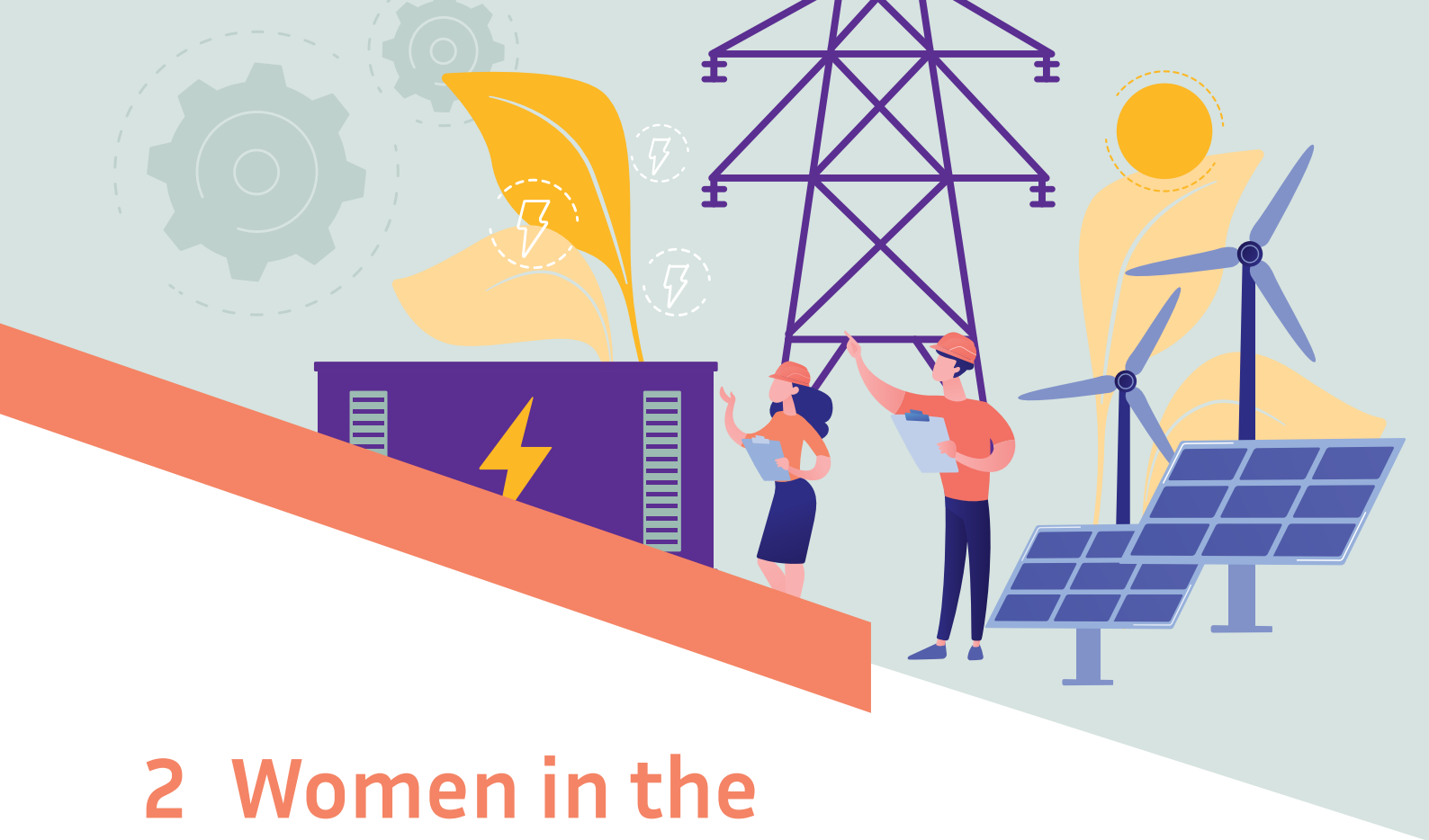
Given wide variations in the availability of statistics and the feasibility of working in-country, the methodology used in this assessment to collect and present sector-specific data varies considerably and does not purport to be exhaustive.⁵ More details about the report's methodology can be found in Appendix A, and country profiles with data on related indicators are available in appendix B.

Throughout this report, technical, nontechnical, and managerial roles are categorized separately. Since the definitions of these roles may differ from one sector to another, it is important to understand what each category means in the context of the energy sector:

- *Technical roles* refer to jobs that require technical education or skills (often in a STEM field such as engineering or computer science). Examples include electrical and mechanical engineers, geophysicists, and energy efficiency technicians.
- *Nontechnical roles* refer to jobs that do not necessarily require technical experience or education. Examples include jobs in corporate administration, human resources, and communications.
- *Managerial or leadership roles* span both technical and nontechnical jobs and departments. The roles include overseeing other workers and often being responsible for a specific function within the firm. Examples include plant engineering or business development managers.

⁴ Data collection for Algeria is underway as of this writing. For West Bank and Gaza, though consultations in the field have taken place, there have been delays due to COVID-19.

⁵ In general, reasons for limitations include lack of accessible data, COVID-19, and a country's fragility that has restricted access to stakeholders. Further, there is widespread sensitivity when it comes to addressing the subject of gender equality and women's participation in the energy infrastructure sector.



2 Women in the Regional Labor Market

2.1 LABOR FORCE PARTICIPATION

Among the most persistent gender gaps, that of participation in the labor force is perhaps the most telling. With only one out of five women in MENA employed or seeking employment, the region has the world's lowest LFPR among women (less than half the global average) (figure 2.1).⁶ However, this figure masks wider disparities among different countries, and even within each country.⁷ Some countries have made significant leaps toward achieving gender equality, such as

the United Arab Emirates, which has the smallest male-female LFPR differential in the region, at around 41 percentage points. On the other hand, Yemen has the widest LFPR differential, at around 66 percentage points. At the country level, rural areas seem to exhibit wider gender gaps in economic participation (World Bank 2017). For example, in Lebanon, 37 percent of women in Beirut are economically active compared to 15 percent in Akkar, in the rural north (World Bank and UN Women 2021). Such cross-country differences may be explained by the very diverse contexts and multiple fragility drivers that continue to persist across the region.⁸

6 This does not account for unpaid care work (including domestic responsibilities and caring for children and the elderly), of which women's share is fivefold that of paid work (ILO 2018).

7 Chapter 4 in this assessment discusses these trends as they pertain to the energy landscape in the region.

8 Fragility drivers include conflict-related risks; economic, institutional, and social challenges; and climate-related vulnerabilities. For example, the conflict in Yemen has created the world's largest humanitarian crisis, with 24 million Yemenis in need of assistance (World Bank 2021b); volatile conditions in West Bank and Gaza have worsened what was already a protracted conflict in perpetual gridlock; the world's largest refugee crisis has forced 6.6 million refugees to leave Syria since 2011 and internally displaced another 6.7 million (UNHCR 2021); and the economic and financial crisis in Lebanon ranks among the top three most severe crises since the mid-1900s. Furthermore, 60 percent of people in MENA live in areas with high or extremely high surface water stress, compared to the global average of 35 percent (World Bank 2021b).

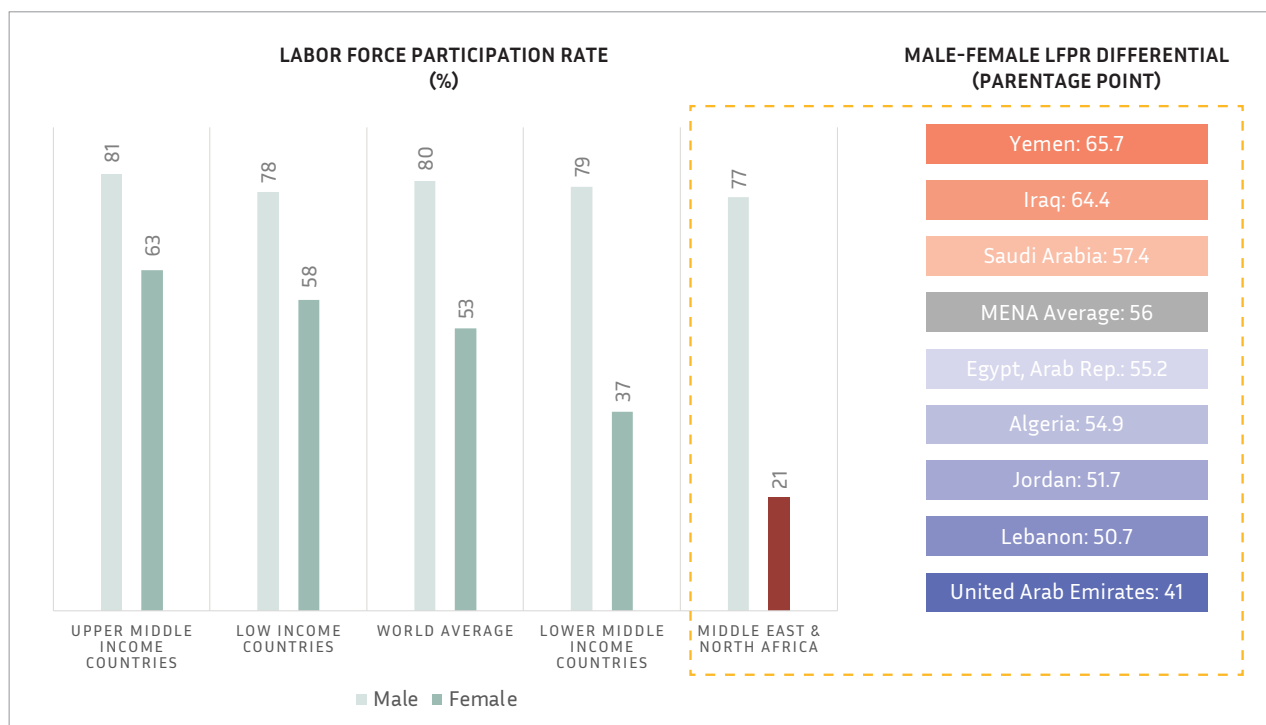
2.2 UNEMPLOYMENT

In MENA, skilled women are participating more in the labor market than women overall but are much more likely to be unemployed, showing notable gender gaps across countries. As shown in figure 2.2, across all countries, the LFPR of women with advanced degrees is higher than that of the national female LFPR, while the LFPR differential between men and women is as little as 11 percentage points in Tunisia and as much as 36 percentage points in Qatar and Saudi Arabia.⁹ These numbers are clearly better than the overall LFP differentials reported in figure 2.1. However, having university degrees does not suffice to

bridge the gender gap in employment. As figure 2.2 shows, the unemployment rate among skilled women in MENA is still higher than that for men, with a gap as high as 31 percentage points in West Bank and Gaza. The lowest differential, of 2 percentage points, is observed in Qatar.¹⁰

The disproportionate levels of unemployment in the MENA region are largely among women and youth. Despite wide variations between countries, youth unemployment is notably higher than overall unemployment across the board. Young women between the ages of 15 and 24 are far more likely to be unemployed than older female cohorts (figure 2.3). Over 60 percent of young women seeking work are unemployed

Figure 2.1 Labor force participation rate by gender and region



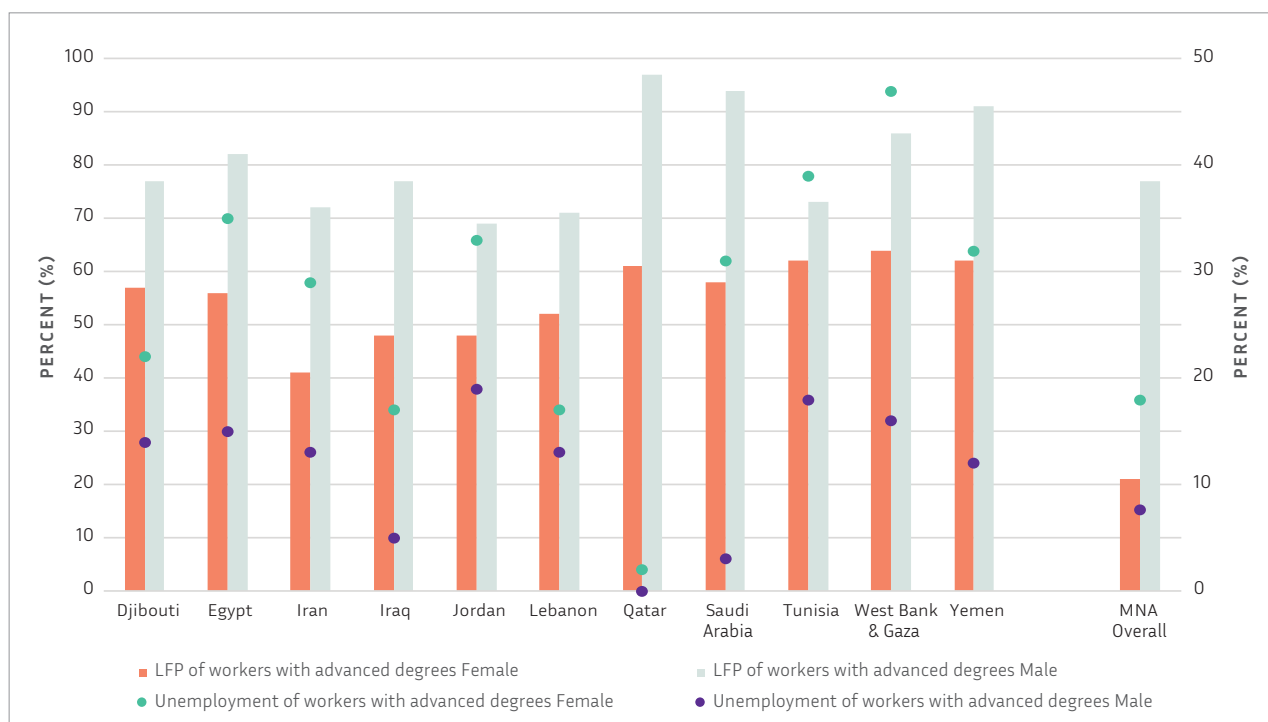
Source: World Bank data (2019).

Note: LFPR = labor force participation rate; MENA = Middle East and North Africa.

9 Data from countries of the Gulf Cooperation Council (GCC) include nationals and nonnationals.

10 In most countries in MENA, women with advanced degrees are more likely to be unemployed than women with lower levels of education. Studies point to longer periods of unemployment among women compared to men, likely because educated women may have specific or higher expectations about work and are therefore more willing to wait for a job (World Bank and UN Women 2021; Hillis, Alaref, and Takkenberg 2018).

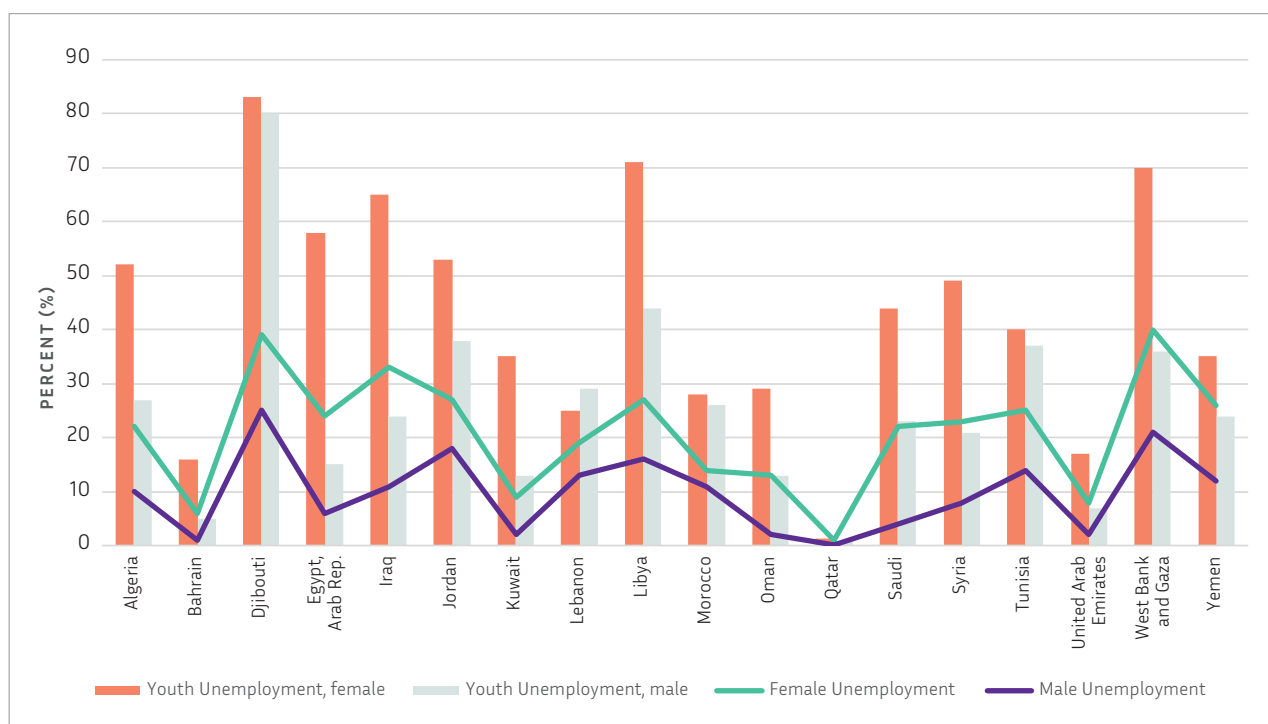
Figure 2.2 Labor force participation rates of skilled women and men in MENA



Source: WDI, where data are available (accessed January 2022).

Note: LFP = labor force participation; MNA = Middle East and North Africa.

Figure 2.3 Unemployment across MENA by gender and age group



Source: WDI 2019 (accessed January 2022).

in Iraq, Libya, Saudi Arabia, and West Bank and Gaza. The lowest levels of unemployment and youth unemployment are in Qatar, Kuwait, Bahrain, and the United Arab Emirates. While gender gaps in labor force participation and employment are also lower in these countries, these mask stark differences when disaggregated by nationality. For example, Qatari women are almost twice as likely to be unemployed than Qatari men, whereas the gender gap in unemployment among nonnationals is much smaller (Qatar Planning and Statistics Authority 2020).

Young women also compose a large share of discouraged workers, “defined as those who are not working and who have expressed a desire to work but are not seeking work for a range of reasons” (ILO 2016). A study shows that of all discouraged youth, women represent 78 percent in Egypt, 59 percent in Jordan, 59 percent in Lebanon, 62 percent in West Bank and Gaza, and 68 percent in Tunisia. In Egypt, the top reason

given for this discouragement is that respondents “do not know how or where to seek work”; among the other countries the top reason reported is “no jobs available in the area/district” (ILO 2016).

Most women who work do so for the public sector. While public sector recruitment is declining overall in MENA, the share of women taking up government jobs is increasing in most countries across the region (Assaad and Barsoum 2019). In Egypt, for example, women represented 31 percent of public sector employment in 2017 compared to 25 percent in 2001, and in Jordan, this share grew from 17 to 21 percent between 2005 and 2014 (Assaad and Barsoum 2019). This increase is partly due to the rising share of female graduates as well their preference for public sector employment, which offers more job security and a more flexible schedule to accommodate women’s responsibilities at home as opposed to the long working hours in the private sector (Assaad and Barsoum 2019).

Figure 2.4 Share of female managers (all occupations)



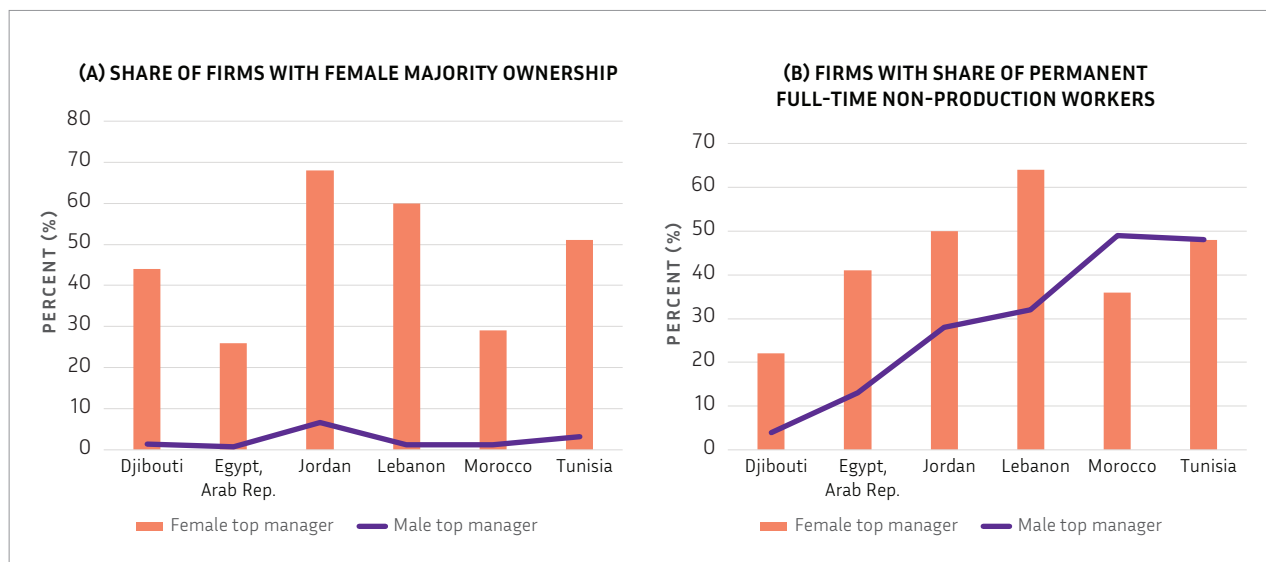
Source: ILOSTAT 2019 (accessed January 2022); original calculation based on the ILO indicator, “Employed by sex and occupation, thousands (annual).”

2.3 ENTREPRENEURSHIP AND LEADERSHIP

As in most parts of the world, women in the MENA region are largely absent in the board room. The share of female managers among employed women is very low at less than 10 percent in all MENA countries (figure 2.4). The gender gap in management is prominent across the region, with the largest observed in Libya and in Djibouti (figure 2.5). This is also consistent with studies conducted across select companies in MENA that show the average share of women in private firms at 7 percent, is less than half the global average of 18 percent (Enterprise Survey, latest available data).¹¹

Gaps in female entrepreneurship also persist. Despite reports showing that companies with gender diversity demonstrate higher productivity, less than 2 percent of women who are employed in MENA (overall) are employers and only 4 percent of firms represent majority ownership by a woman—lower than in any other region (World Bank 2019; Enterprise Survey 2021).¹² Studies point to the fact that firms owned by women tend to hire more women, including to the top management positions (figure 2.5). For example, a survey of 532 firms in Lebanon revealed that companies led by women employed a larger proportion of female permanent full-time workers (49 percent) compared to firms led by men (22 percent) (World Bank and UN Women 2021, based on Enterprise Survey 2019).

Figure 2.5 Impact of female ownership of firms, by gender of top managers and employees



Source: Enterprise Survey, latest available data.

11 The Enterprise Survey is a firm-level survey of a representative sample of an economy’s private sector and covers 150 countries. In the MENA region, the survey covers Djibouti (2013), Egypt (2020), Iraq (2011), Jordan (2019), Lebanon (2019), Morocco (2019), Syria (2009), Tunisia (2020), West Bank and Gaza (2019), and Yemen (2019).

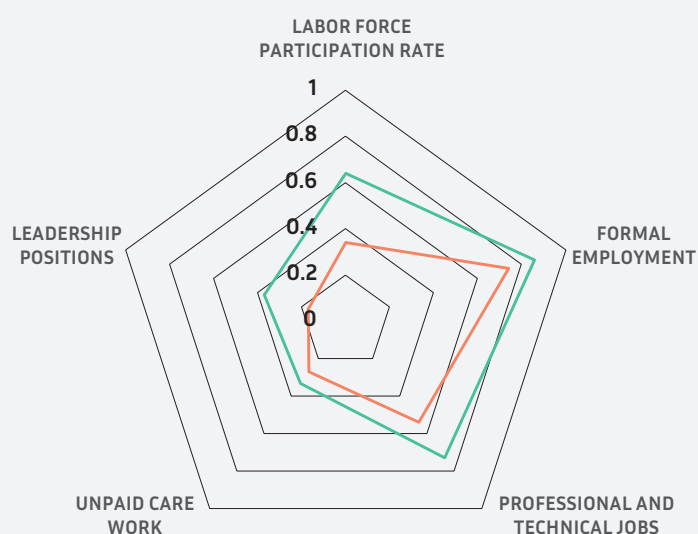
12 According to reports by the International Finance Corporation, companies where women serve on boards and executive committees have a 47 percent higher return on equity and 55 percent more gross income (World Bank and UN Women 2021).

3. Transitioning from Education to Work

3.1 GENDER AND EDUCATION IN THE MIDDLE EAST AND NORTH AFRICA

There is a clear mismatch between the improvements in women’s access to tertiary education in the MENA region and their lagging access to the job market. The share of women enrolled in tertiary education in MENA is comparable to the global average of 43 percent (WDI, accessed January 2022). A divergence can be seen in the STEM-related fields, where women’s presence is notably higher in MENA than in other middle- and high-income countries as well as above the world average. In Lebanon, for example, women’s enrollment in STEM-related jobs is at 61 percent (Ahmad et al. 2019). Despite this impressive trend, the MENA region lags on almost every labor market indicator (figure 3.1), and women suffer a wide gender gap in access to professional and technical jobs as well as leadership positions.

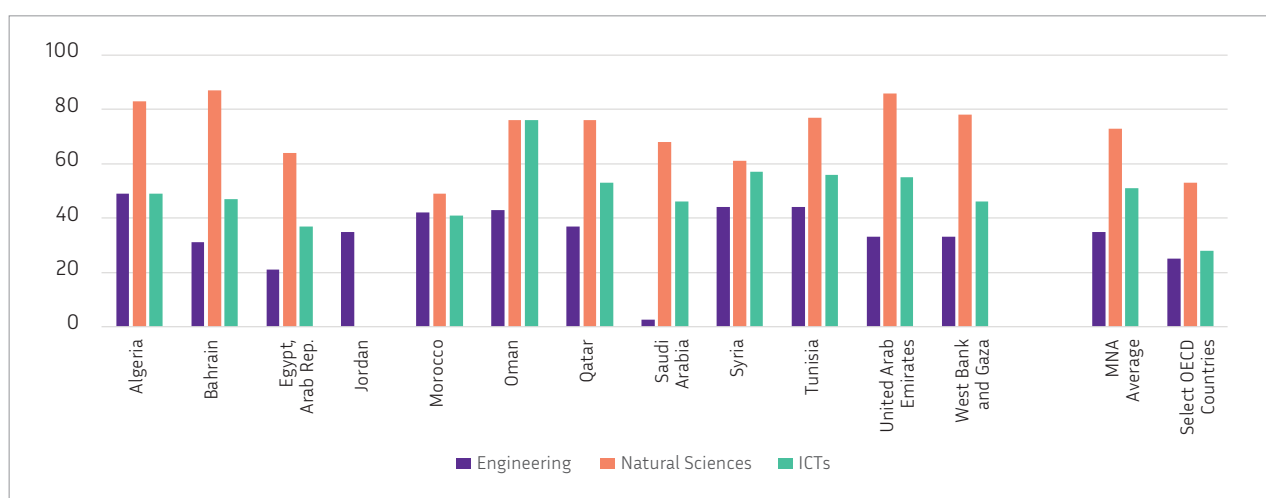
Figure 3.1 Key work-related indicators for select MENA countries



Source: Adapted from McKinsey & Company (2019, 11).

Note: Only Algeria, Egypt, Morocco, and Tunisia are represented. All numbers are expressed as a female-male ratio. Unpaid care work refers to hours worked by women compared to hours worked by men in care work at home.

Figure 3.2 Share of female university graduates, by STEM field, in MENA and OECD countries, 2017



Source: Adapted from UNESCO (2021, 12–13).

Note: Select OECD countries include Canada, Denmark, Finland, Japan, Malaysia, Mexico, the Netherlands, New Zealand, Singapore, Sweden, Turkey, the United Kingdom, and the United States. ICTs = information and communication technologies; MNA = Middle East and North Africa; OECD = Organisation for Economic Co-operation and Development; STEM = science, technology, engineering, and mathematics.

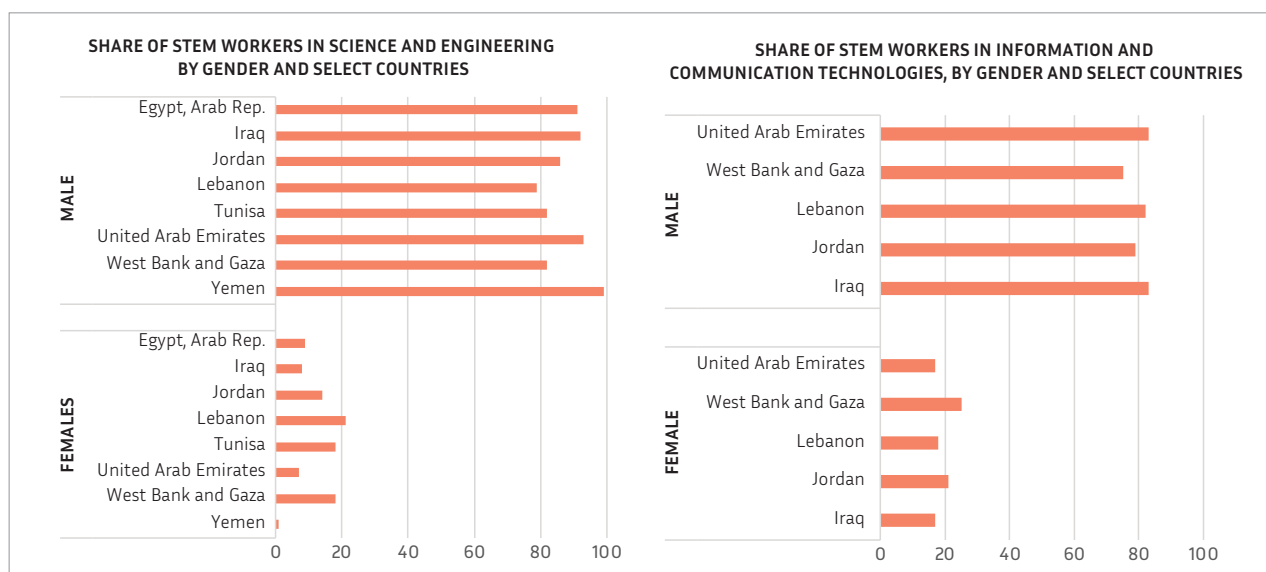
In many MENA countries, women are the majority in tertiary education and in STEM fields.¹³ According to the 2021 United Nations Educational, Scientific and Cultural Organization (UNESCO) Global Science Study, women’s average share of degrees in engineering, natural sciences, and information and communication technology (ICT) in select MENA countries is 53 percent compared to an average of 35 percent in OECD countries (figure 3.2). These findings match earlier reports showing women’s share among STEM graduates ranging from 34 to 57 percent, a level comparable or even above the 35 percent global average (UNESCO 2017). However, these fields of study are often theoretical and/or related to more traditional types of occupations, such as in medicine, engineering, and research. Anecdotal evidence indicates that early education and training in newer areas of technology are nascent and not necessarily integrated in

educational curriculums, leaving critical gaps in skills development for youth competing in future markets.

Despite women’s achievements, there are few women in STEM occupations. In many MENA countries, women represent less than 20 percent of the workers in STEM-related occupations, specifically in science, engineering, and ICT (figure 3.3). In Egypt, on average, women represent 43 percent of STEM graduates; however, they represent less than 10 percent of the share working in science and engineering occupations. A notable gap is evident in the United Arab Emirates, where female representation is even lower, at 7 percent, even though women are approximately 60 percent of graduates in STEM-related fields. Trends are the same in ICT, with men dominating the field (UNESCO 2021 based on 2017 data; ILOSTAT, latest available data).

13 According to UNESCO, “STEM as a field covers traditional disciplines such as Medicine, Engineering, Chemistry, Biology, Mathematics and Statistics, as well as the more specialized disciplines such as Astrophysics, Biochemistry and Genetic Engineering [....] There are huge range of STEM occupations, including computer, scientists, network and computer systems administrators, database administrators, nuclear technicians, engineers, material scientists, microbiologists, biochemists, and many others”; UNESCO glossary: <https://unevoc.unesco.org/home/TVETipedia+Glossary/filt=all/id=640>.

Figure 3.3 Share of workers in STEM occupations in select MENA countries



Source: ILOSTAT, latest available data (accessed in January 2022).

3.2 FACTORS BEHIND GENDER GAPS

A combination of factors contributes to poor labor market outcomes and limited entrepreneurship among women in the region. Demand- and supply-side constraints, such as a lack of jobs and a skills mismatch—attributed to the overall disconnect between what is taught at schools and what is needed on the job—are important factors. Other drivers of gender disparity include social or normative constraints that women face due to deeply entrenched patriarchal belief systems, legal restrictions that reinforce gender stereotypes and occupation segregation, and pervasive wage inequality.¹⁴ Public sector employment across the region is still oversized (despite declining trends) and the government remains the major employer: according to pre-

COVID estimates, the central government wage bill in MENA represents 10 percent of GDP, compared to a global average of 5.4 percent (Saliola 2019).

The changing landscape of jobs being created in high-skilled areas is often undermined by inadequate skills and shortage of talent due to a lack of educational opportunities and traditional curriculums that are in need of reform (World Bank 2018). Most MENA countries that participated in the Trends in Mathematics and Science Study (2019) performed below the international average in math and science for the eighth grade (Mullis et al., 2020). While results over time show girls in MENA outperforming boys in both subjects, they still lag behind the global average. Their higher performance also does not translate into labor market outcomes. Consultations in Egypt, Jordan, Lebanon, and West Bank and Gaza show that girls' career choices are highly influenced by family and social

¹⁴ Despite improvements over time, the MENA region is recorded as having the highest number of gender-based restrictions in laws, which affect women's access to work compared to other regions (World Bank 2022). With an average regional score of 53 out of 100, compared to the global average of 76.5, it is important to note that there is a significant variation across countries. These countries are measured against eight core indicators: mobility, workplace, pay, marriage, parenthood, entrepreneurship, assets, and pensions (World Bank 2022).

“In my first job, my manager was a woman, she was very strong and very smart. From the first day, I wasn’t treated differently than my male colleagues, I also had to go and visit sites. But when I work with solar PV installation companies, I can see that the technicians are rarely ever women and women don’t go into the field.”

– Stakeholder interview in Lebanon, 2021

expectations regarding what is deemed appropriate for women—in terms of the workplace environment, working hours, or daily tasks. One employer interviewed stated, “Personally, I am not against women in the energy sectors but sometimes the role is not suitable for the woman. Sometimes it’s physical reasons and sometimes it’s the culture itself. I usually assign on-site installations to the men because they can carry very heavy equipment and it needs their physical strength. Sometimes the owners of the house, they refuse that women engineers go and install the PV itself” (stakeholder interview in Jordan, 2021).

Furthermore, societal norms regarding a woman’s role at home and a lack of affordable and quality childcare are major challenges, further exacerbated by COVID-19. Women face specific barriers to the job market based on their expected roles in society and their families (World Bank 2020). Data from across the region show that women are likely to spend two to three times more time in childcare activities than men (see appendix B). A survey of attitudes on gender equality carried out in Egypt, Morocco, and West Bank and Gaza found that the majority of men (87, 72, and 80 percent, respectively) agreed to the statement: “A woman’s most important role is to care for the home and cook for the family.” More than 77 percent of women in Egypt also agreed with that statement, while the share was much lower in Morocco (49 percent) and in the West Bank (59 percent)—yet still remarkably high (El Feki, Barker, and Heilman 2017). Such attitudes are set against a backdrop of few alternatives when it comes to care giving. For example, in Jordan only 3 percent of children below the age of five benefit from childcare services, and this is likely the case in other MENA countries (Ait Ali Slimane 2020). Other studies show that there is a correlation between a woman’s labor force participation and her marital as well as child status. In Lebanon, married women aged 24–35 are 81 percent less likely to be in the labor force than unmarried women, and for every child a university educated woman has, the LFPR drops from 60 percent (no children) to 15 percent (3+ children) (World Bank and UN Women 2021). Furthermore, the impact of COVID-19 and subsequent lockdowns and school closures have increased care responsibilities among women, as they tend to be the first to give up their jobs: based on United Nations and International Labour Organization reporting, job losses among women stand at 5 percent compared to 3.9 percent for men due to the pandemic. In a region and sector where women are already underrepresented, such declines can reverse progress made to date (UN 2021).

Lack of adequate and safe transportation is an additional barrier to women’s access to work. In Jordan, 47 percent of women have refused a job offer because of lack of transportation (Aloul, Naffa,

and Mansour 2018); and in a survey of five cities (Algiers, Amman, Beirut, Casablanca, and Muscat), 41 percent of women—alongside the 47 percent of women who do not use public transportation—state it is because they do not feel secure (or safe), relative to using their own car or a taxi (Delatte et al 2018).

Importantly, women face constraints when it comes to networking and accessing information about job opportunities or internships where they can get practical experience. A study using LinkedIn data shows that, globally, women are 14–38 percent less likely than men to have a strong professional network and 26 percent less likely to ask for a referral (Lewis 2020). This is in line with a growing body of evidence showing that women and men network differently, due to the specific hurdles that women face, particularly as they advance in their career—such as balancing responsibilities and building confidence (Uzzi 2019; Elsesser 2019). Women also miss out on networking opportunities early on in their career because of childcare constraints. According to a survey carried out across Egypt, Saudi Arabia, and the United Arab Emirates, the second-most reported reason why women do not join or stay in the workforce is a lack of mentorship and role models (McKinsey & Company 2020). There are also issues related to mobility and norms, particularly in contexts marked by fragility and conflict, which may make it difficult for young women to get their foot in the door, especially in nontraditional jobs. This is the case in Gaza, where field discussions revealed that the first job often required one to physically present one’s qualifications to businesses.¹⁵

3.3 LABOR MARKET TRANSFORMATIONS AND THE ENERGY TRANSITION

Labor markets are undergoing radical transformation with the diffusion of digitalization and automation, and there is a greater need today to fast-track women’s access to sustainable jobs (figure 3.4). The increasingly prominent role of data and access to digital services are both a threat and an opportunity for men and women alike in the MENA region. However, due to their lower levels of professional development and digital inclusion, women are more likely to be impacted by the labor market transformation. A recent analysis by the World Wide Web Foundation—based on data and models developed by the International Telecommunication Union from 32 countries, including Algeria, Egypt, Morocco, and Tunisia—found a significant gender gap in access to internet services, with men being 50 percent more likely to be online than women (WWWF 2021).¹⁶ Furthermore, advanced ICT skills are notably low in the MENA region. While there are increasing opportunities to develop skills, these will require a degree of access and connectivity that may be challenging in contexts characterized by fragility, conflict, and violence and for women due to the aforementioned norms and constraints.

The dynamic energy transition in MENA offers an opportunity to attract more women toward sustainable and highly productive jobs that will change the face of the region. Some MENA

15 Anecdotal evidence from consultations with the ASPIRE (Advancing Sustainability in Performance, Infrastructure, and Reliability of the Energy Sector in West Bank and Gaza) project implementation unit staff in 2019.

16 Internet use varies considerably by country in MENA, with almost universal access among women and men in the GCC countries compared to only a third of women (34 percent) and 64 percent of men in Iraq (latest available data from 2017; <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/Digital-Development.aspx>). That said, the low share of overall connectivity is due to overarching issues of poor infrastructure, high costs, and few options to choose from, as seen in many contexts (Alsbah et al. 2021). Also, the situation is rapidly changing with more and more people getting connected. For example, in Egypt, only 41 percent of the female population were using the internet in 2018 compared to 71 percent in 2020 (42 percent compared to 73 percent among males).

countries are among the most highly dependent on oil and gas in the world. For example, in most GCC countries, oil and gas accounts for more than 20 percent of GDP and at least 50 percent of state revenues (World Bank 2019; IMF 2016). The global climate action agenda and energy transition pose significant macroeconomic risks, which will percolate down to labor markets and households. This likelihood has led regional governments to place greater emphasis on economic diversification. The energy sector takes a central role in these diversification plans due to its multidimensional connections to local

development, the region's vast potential for natural resources, and the need to sustainably meet growing demand for energy. Diversifying the energy sector's value chain in MENA opens the door to leveraging this structural transformation to address the severe underrepresentation of women in the energy workforce. However, there is a need first to understand the status of women's employment in the sector, the obstacles that women face in entering or staying in it, and the existing policy space and how it is affecting women's participation in the sector.

“Seeing is believing, we need female students to see successful examples of women in Energy.”

– Focus group discussion in Egypt, 2021

Figure 3.4 Economic benefits of gender equality in MENA's Labor Market



Increase in
GDP growth



Higher income per capita
due to higher levels of productivity



Enhanced social and economic resilience
through women's empowerment

Source: Analysis of multiple sources. See References section.
Note: MENA = Middle East and North Africa.

4. The Gendered Energy Landscape in MENA

Diversification of the energy sector will likely create more and different types of jobs—a majority of them in the renewable market. The global energy market is estimated to grow 44 percent by 2050 with 80 percent of the jobs being in renewables as compared to 11 percent in fossil fuels and 5 percent in nuclear energy (Lewis and Collins 2021). A 2021 analysis by the International Renewable Energy Agency (IRENA) indicated that global renewable energy jobs had increased by 71 percent—from 7.3 million in 2012 to 12 million jobs in 2020—faring well even during the COVID-19 pandemic.¹⁷ Trends in the MENA region reveal similar opportunities for employment growth, with over US\$100 billion invested in renewables projects in 2021 alone (MEED 2021). While some job profiles will likely remain the same (that of marketing and administrative personnel, engineers, professional experts, technicians, and unskilled workers), the trades in greatest demand are likely to change. For example, jobs in the oil and gas sector are dominated by tradespeople such as pipelayers, plumbers, pipefitters or steamfitters, and construction equipment operators, while positions in renewables are dominated by solar PV installers, wireman, roofers, and electricians (IRENA 2021a). There will be a growth in demand for skills in telecommunications, computer science, and artificial intelligence as the sector diversifies and modernizes (IRENA 2021a). While most evidence indicates that future positions in the sector, especially in renewables, are likely to be

easier for women to access, further investigation is needed, given the diverse trends of the renewable tech industry.¹⁸

In many MENA countries where data are available, women’s average representation rate in the energy sector is well below the global average of 22 percent (IRENA 2019). Based on the latest available labor force surveys in Egypt, Jordan, Iraq, Lebanon, and Saudi Arabia, women’s participation in the energy sector is below 10 percent on average (figure 4.1). In Algeria the range is larger, with the bottom figure coming from a state-owned utility and the top, a sample of private sector companies (primarily renewables), half of which are internationally owned. Further analysis shows that the average share of women in international companies was 29 percent compared to only 4 percent in local companies. Data from West Bank and Gaza paints a slightly better picture, at 10 to 15 percent. The major outlier is Tunisia with a 27 percent share of women in the energy workforce, though a closer examination reveals that these are concentrated in clerical work or in low-skill services.¹⁹

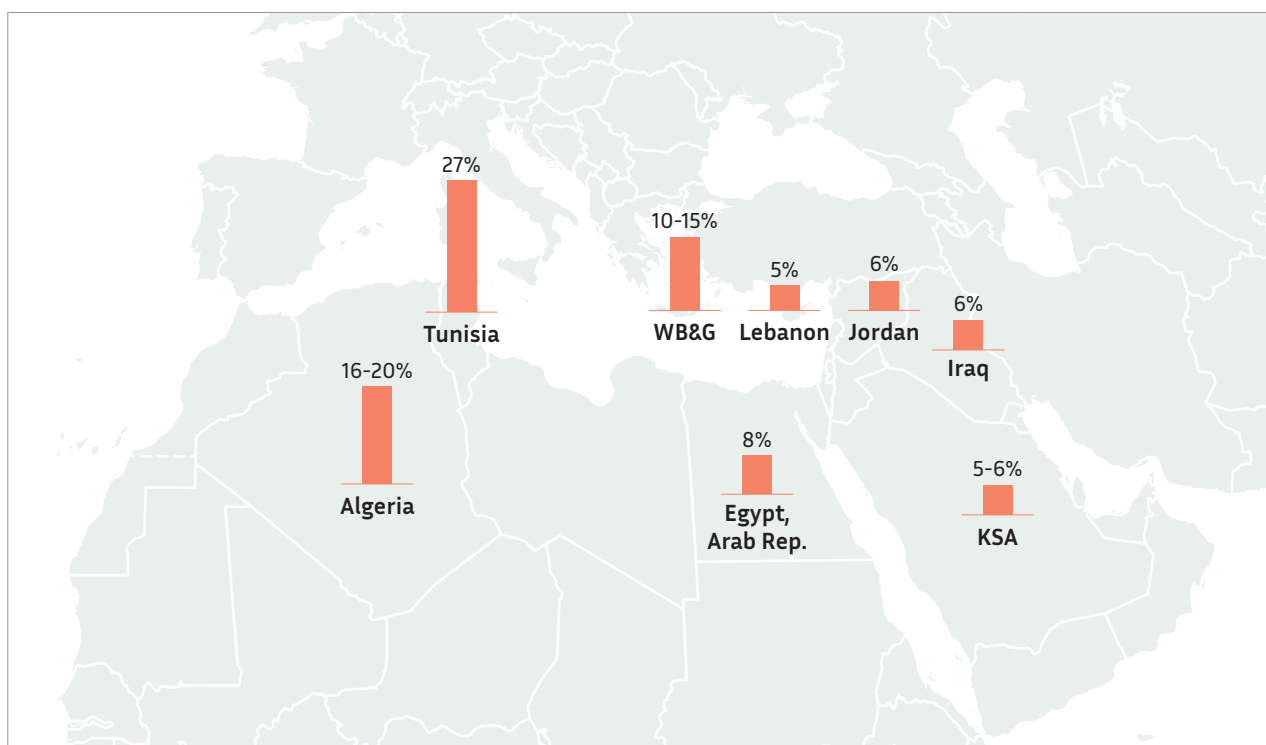
While representation of women in the sector seems limited, existing analysis from other MENA countries shows variation with notable levels of female participation in the GCC countries. A desk review of available data from Qatar, Kuwait, and Oman reveals that the share

17 These include direct and indirect jobs. Technologies covered in this field are solar PV, bioenergy, hydropower (direct only), wind energy, solar heating/cooling, and others (including geothermal energy, concentrated solar power, heat pumps [ground based], municipal and industrial waste, and ocean energy)Error! Hyperlink reference not valid. (IRENA 2021b).

18 This is also manifested in the higher number of women in renewables as compared to oil and gas: 32 percent compared to 22 percent, respectively (IRENA 2021a).

19 IRENA does not provide regional data figures, with very limited data on the MENA region. Also, it should be noted that the IRENA (2019) study has some limitations including biased sampling from Europe and North America. Similarly, the MENA numbers cited in the report are heavily biased by sampling from the United Arab Emirates.

Figure 4.1 Women's share in the workforce of key energy-related sectors in select MENA countries



Sources: Algeria—this range represents different data sets, including state-owned oil company SONATRACH (2018) and online survey respondents from 18 private sector companies primarily focused on renewables, 10 of which are international (March 2022); Egypt, Arab Rep. —women's share in the total energy sector workforce based on the 2019 LFS; Iraq—women's share in non-renewables and renewables based on the 2012 LFS; Jordan—women's share in the total energy sector workforce based on the 2016 LFS; Lebanon—share of women in electricity, gas, steam and air conditioning, based on the 2018/2019 LFS; Saudi Arabia (KSA)—average share of women in (1) mining and quarrying and (2) electricity, gas, steam, and air conditioning supply, based on the 2021 LFS; Tunisia—women's share in the energy sector workforce based on the 2014 LFS; and West Bank and Gaza—women's share in renewables and the traditional electricity sector based on data provided by stakeholder interviews. Note: WB&G = West Bank and Gaza; KSA = Kingdom of Saudi Arabia.

of women's economic activity in related fields—such as (1) mining and quarrying; (2) electricity, gas, steam, and air conditioning services; and (3) construction—is still lower than that of men, but in some instances, higher than what is seen more commonly in other MENA countries. For example, in Qatar, women represent 21 percent of workers in mining and quarrying and as high as 40 percent in electricity, gas, steam, and air conditioning; in Oman their share ranges from 8 percent to 16 percent; and in Kuwait 7 percent and 4 percent, respectively.²⁰

The mean gender wage gap in the energy sector averages at 15 percent—across Egypt (18.5 percent), Jordan (19.3 percent), and Iraq (8 percent)—to the disadvantage of women.²¹

However, the gender gap may be much higher than the average estimation when we consider a number of factors: (1) low female LFPRs, (2) employment characteristics, and (3) unobservable characteristics. First, we cannot compare the average wage estimates of men and women in the energy sector as their LFPRs vary greatly, from 90–95 percent (men) to 5–10 percent

20 Sources: Qatar—Planning and Statistics Authority, Annual Report 2021; Kuwait—Kuwait Central Statistical Bureau, Annual Statistics (2017–18); and Oman—National Center for Statistics and Information, Annual Statistics Report 2021. These data include national and nonnational figures.

21 Original calculations based on labor force surveys for Egypt (2019), Jordan (2016), and Iraq (2012).

(women). Second, there is greater variation in employment characteristics among men, who fill the range from low- to high-skilled jobs, whereas the majority of women in the energy sector, in many countries, are employed in high-skilled jobs. Typically, high-skilled jobs are associated with higher pay, but average wages are likely to mask the actual gender wage differentials. Third, given that few women are employed in the energy sector, it is suggestive that they may have unobservable characteristics (e.g., grit, confidence, emotional intelligence, and managerial potential), which are not representative of all women in the labor market. As such, the average wage gap compares the *average* man in the energy sector with the *unique 5–10 percent* of women in the energy sector.

4.1 WOMEN IN POWER UTILITIES

The gender gap extends to women working in national power utilities, especially those in technical roles. The total share of women at Lebanon’s power utility Electricité du Liban (EDL) is 15 percent, at Jordan’s National Electric Power Company (NEPCO) is 20 percent (figure 4.2), and in Algeria’s state-owned utility SONATRACH is 17 percent (figure 4.3), compared with the global average of 25 percent. Along these lines, the share of women in the Palestinian Energy and Natural Resources Authority (PENRA), the associated electricity distribution companies, and electricity suppliers in West Bank and Gaza is only at 10 percent, but it is even lower at the Palestinian Electricity Company, at 2 percent (figure 4.4).

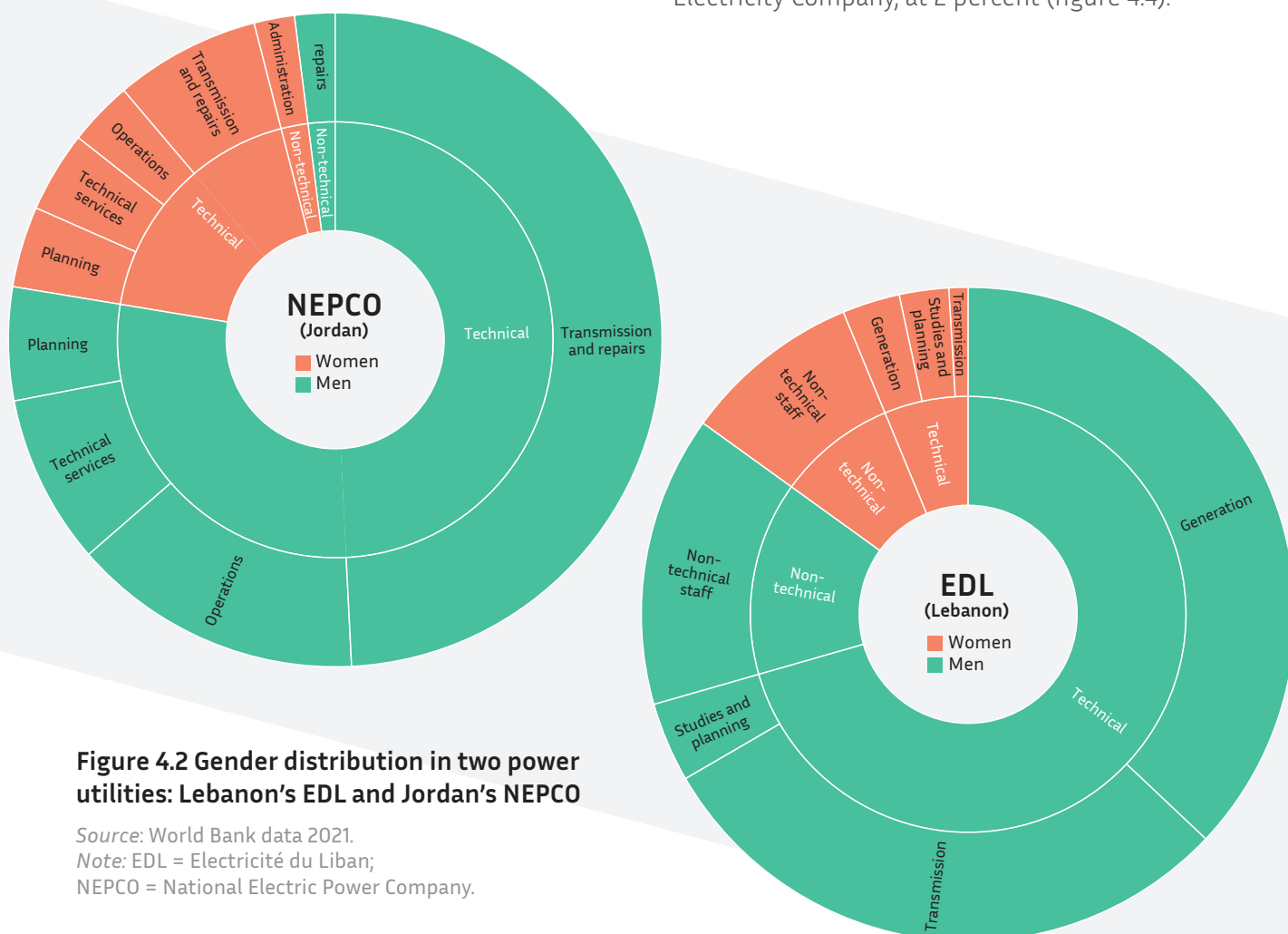
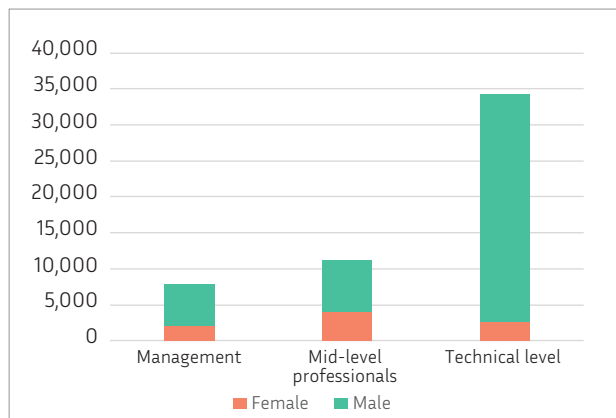


Figure 4.2 Gender distribution in two power utilities: Lebanon’s EDL and Jordan’s NEPCO

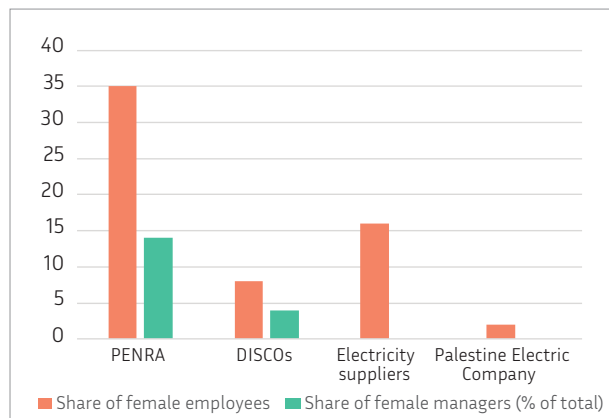
Source: World Bank data 2021.
 Note: EDL = Electricité du Liban;
 NEPCO = National Electric Power Company.

Figure 4.3 Gender distribution in SONATRACH, Algeria



Source: SONATRACH 2018 human resource data.

Figure 4.4 Gender distribution in West Bank and Gaza utilities



Source: Human resource data retrieved during stakeholder interviews in West Bank and Gaza between December 2021 and March 2022. Management data are available only for PENRA and the distribution companies.

Note: DISCOs = electricity distribution companies; PENRA = Palestinian Energy and Natural Resources Authority.

Women’s representation in technical fields and leadership is also low.

The share is particularly low in technical departments (e.g., those responsible for repairs and transmission)—it stands at about 13 percent at NEPCO, 8 percent at SONATRACH, and 6 percent at EDL. In nontechnical roles (e.g., policy, legal, etc.), NEPCO has a balanced gender representation, with women making up half. In other Jordanian power utilities, such as the Electric Distribution Company and the Irbid District Electricity Company, female LFPRs are also very low—at less than 8 and 6 percent, respectively (USAID 2016).²² Women’s representation is disproportionately low in leadership roles. For example, there are no women serving on EDL’s board of directors. In West Bank and Gaza, interviews with utilities suggest that women compose only 9 percent of the management, which is marginally lower than the figure outside the energy sector.²³ Finally, while the share of women in management seems higher in Algeria’s SONATRACH, at 26 percent, it is likely because the

definition used for management is broad and includes support and backup positions such as engineering.

Global experience indicates that utilities with improved women’s representation show better financial, environmental, social, and corporate governance performance. According to a recent case study focused on US utilities, those with the largest percentage of women in leadership roles were, on average, 47 percent more profitable than companies with the least representation. Companies with greater women’s representation were also substantially more transparent and ranked higher on environmental, social, and governance metrics (Ernst and Hlinka 2021). This view is consistent with the wider research on the positive impact of gender diversity on companies in general, and on utilities in particular, due to the access afforded to a wider pool of talent and higher levels of professionalism, productivity, and innovation (USAID 2016).

²² In Jordan, it seems that both public and private sector

²³ Based on data from stakeholder interviews, women in senior roles (across energy business lines) are better represented in the public sector at 9 percent in PENRA, 4 percent in DISCOs, and 2 percent in renewable energy companies.

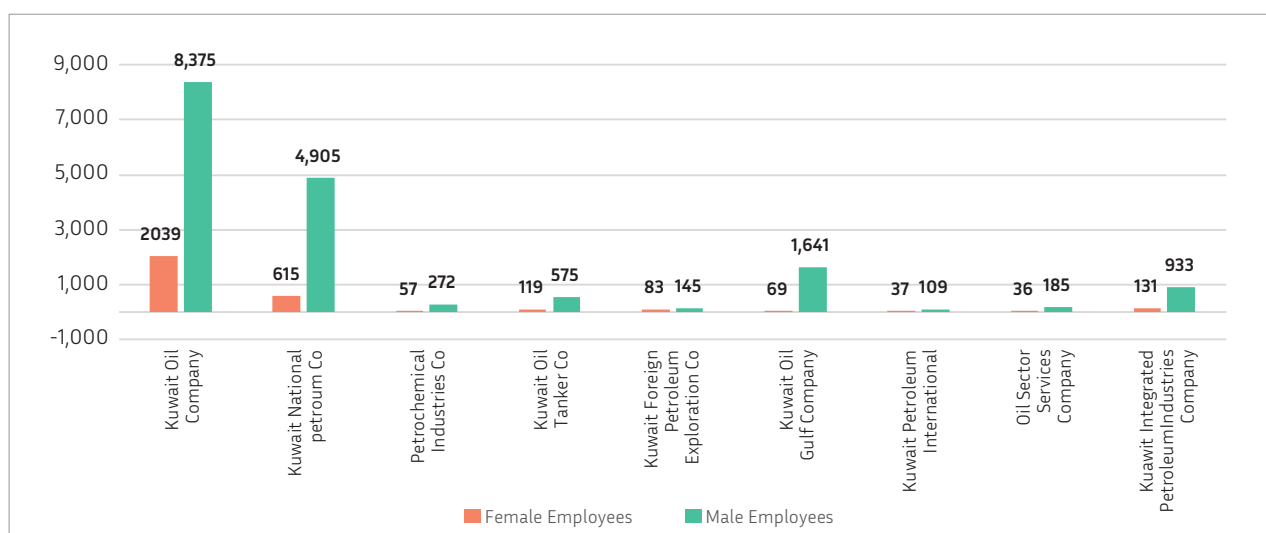
Apart from electricity utilities, oil companies in Kuwait shows limited representation of women—approximately 19 percent (figure 4.5), which is consistent with global reports that women represent only 15 percent of the oil and gas workforce (McKinsey & Company 2019). While we cannot determine the distribution of employees by gender and position due to limited data availability, the same McKinsey survey (2019) shows that the representation of women steadily declines after each stage of promotion within the sector in Kuwait, for example, women represent only 12 percent of supervisory positions in oil companies (Menachery 2019).

4.2 GENDER AND RENEWABLE ENERGY

In Egypt, which is one of the major energy development hubs in MENA, renewable energy firms are more likely to employ women in technical roles as compared to nonrenewable energy industries. Based on the available labor force data for Egypt, 11 percent of women work in technical and associated professional roles in the renewable sector, as opposed to 6 percent

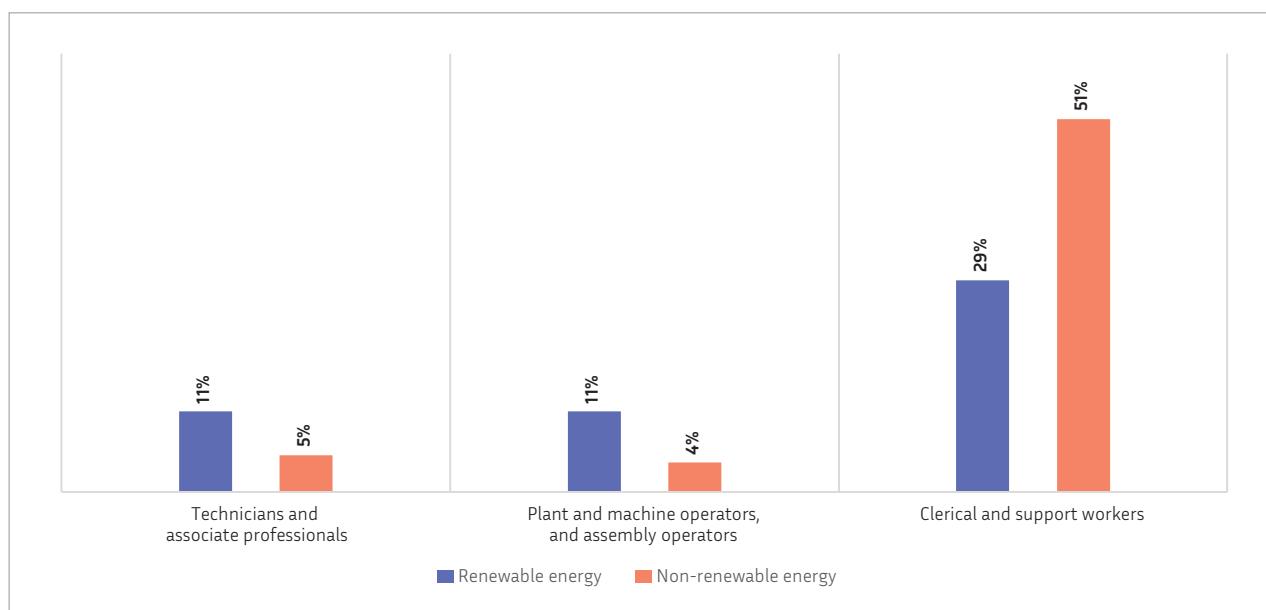
in other energy industries (figure 4.6). Similarly, more women work as plant operators in the renewable energy sector (11 percent) than in other energy industries (4 percent). The employment redistribution effects of renewable energy can be fully understood when we observe that the share of women who work in clerical support roles versus other roles in the renewable energy sector is substantially lower (by 22 percentage points) than that of other energy industries. There are several reasons for this. First, as shown in the World Bank report, “Shedding Light on Female Talent in Lebanon’s Energy Sector,” female students in Lebanon are more interested in enrolling in renewable energy programs (Ahmad et al. 2019). The same case study also points to an important factor, that is, the reputational advantage of renewable energy being more “green,” sustainable, and modern. With youth in the MENA region becoming increasingly aware of climate change and the environmental stress it induces, such reputational factors could have a major effect (Shafi 2022). A PwC (2019) survey found that youth in the countries of the GCC, the Levant, and North Africa are increasingly concerned about issues of energy consumption, water conservation, and recycling.

Figure 4.5 Distribution of employees in Kuwait’s oil companies by gender



Source: Kuwait Central Statistical Bureau 2020.

Figure 4.6 Distribution of Egyptian women workers across three major job categories



Source: Egypt's Labor Force Survey 2021.

However, shifting toward renewable energy alone is not enough to attract significant numbers of women to work in the energy sector.

IRENA has reported that the global share of women in the renewable energy sector stood at 32 percent, which is 10 percentage points higher than the overall energy sector average (IRENA 2019). This is in distinct contrast with women's representation in the renewable energy sector in the MENA countries, which ranges from 7 to 9 percent in countries where data are available (figure 4.7)—substantially below the global average.²⁴ Also, the introduction of renewable energy in this region does not seem to trigger the same level of women's participation as indicated by global trends.

For example, Jordan and Egypt's labor force surveys (2016 and 2019, respectively) show that women's participation in the renewable energy sector has exceeded that of the overall energy sector by only 1 percentage point.²⁵ Although these are just two of the many countries in the region, they are among the most advanced in handling the energy transition and have become regional hubs of renewable energy development over the past decade. The challenges that are impeding women from joining MENA's energy transition are explored in the next chapter, based on lessons learned from the regional assessment.

24 Disaggregated data by subsector are not readily available in many countries. For example, human resource data collected from Palestinian utilities and renewable companies in West Bank and Gaza show the share of women in the renewables sector to be higher (15 percent) than in the traditional sector (10 percent). However, in absolute terms, there are many more women employed in the traditional sector than in renewable companies.

25 This is based on absolute numbers calculated from national labor force surveys.

Figure 4.7 Share of women in renewables in select MENA countries compared to the global average



MENA
7 to 9%

Women representation in
MENA's renewable energy sector

Global Average
32%

Global women representation
in the renewable energy sector

Source: For MENA, renewable data were collected from Egypt (9 percent), Jordan (7 percent), and Iraq (7 percent); for the global average, data were taken from IRENA (2019).

Note: MENA = Middle East and North Africa.



5. Lessons Learned

Women's limited representation in the MENA energy market is related to the overarching challenges they face throughout the labor force. Stakeholder consultations through interviews and focus group discussions, combined with a literature review, revealed that women face specific obstacles to accessing entry points or participating in energy-related jobs.

- **Legal restrictions that reinforce gender stereotypes in the energy sector across the region:** In all MENA countries but Saudi Arabia and the United Arab Emirates, women are not permitted to work in industrial jobs or those deemed hazardous (World Bank 2022). This may impact employment, given the nature of the sector. Such restrictions in labor codes reinforce pervasive gender stereotypes that determine the types of jobs women should, or should not, be working in.
- **Lack of access to education and equal opportunities for skills development:** Women need to develop the skills of the future, not just to enter the workforce but also to advance their careers. Access to STEM education at the high school and university levels is uneven across the region. For example, in Yemen, where a significant part of the population lives in rural areas, gender parity in primary education has not yet been achieved and women remain vastly underrepresented in STEM fields (Zakham and Jatou 2019). As a participant pointed out during a stakeholder group consultation, in a context like Yemen, finishing a degree, be it STEM or otherwise, is an achievement for many women, given the scale of the challenges that go beyond social stereotyping to a lack of a proper educational environment for females. Tapping into vocational technology opportunities can be an important pathway for skills development, particularly for first-time job seekers.
- **Limited guidance in the public education system, hampering women's transition from education in the STEM fields to work opportunities:** Young women and men are tracked in specific fields of study based on their grades, and few are aware of career options related to their fields of study. An educator participating in a focus group in Egypt said, "There is lack of information about career opportunities in STEM fields within schools; students are not familiar with their options, they are only directed based on their grades. If someone has high grades they automatically go to engineering, economics, and medicine universities." For women,

"There is a clear double standard where women must stand out on every metric to prove themselves eligible for management positions."

– Stakeholder interview in Jordan, 2021

this system can prove to be doubly challenging as they try to convince families that they need to pursue a higher education in a STEM field when they are not tracked to it.

- **Concerns surrounding women's safe mobility, including for on-site work:** For women living in rural areas, lack of safe and reliable transport options impedes efforts at continuing education or taking a job far from home; they also miss out on opportunities to join the labor market, as jobs tend to be centralized in capital cities. In focus group discussions and stakeholder interviews, these issues were noted as potential disincentives for women taking on technical and engineering jobs that may require employees to conduct field work. Another issue noted was inadequate facilities at field sites. To a great extent, these findings are consistent with past research (e.g., Ahmad et al. 2019).
- **Recruitment opportunities that are largely centralized and do not target women:** The majority of opportunities are in central (typically urban) locations. It was reported that few companies specifically target women in their recruitment processes, nor do they mention the need for gender diversity during onboarding or have specific sexual harassment policies.²⁶ Opportunities that consider the needs of women are key to ensure diversity goals can be met.
- **Difficulties in women's advancement owing to implicit biases and inequitable workplace conditions:** Many of the female participants interviewed reported biases and

restrictive attitudes about women's ability to get promoted in the energy sector. One interviewee pointed out that "there is a clear double standard where women must stand out on every metric to prove themselves eligible for management positions." In some companies, there are either no clear wage scales or equal opportunities for promotions.²⁷ Additionally, while the law mandates that companies must provide for childcare, whether in the office or in coordination with other workplaces, the law is often not implemented.

- **A lack of role models and access to career advice in the workforce:** Consultations across countries revealed a common need for consistent training, mentorship, and role models to support female students or first-time job seekers in transitioning to the workforce, as well as to support professionals in getting promoted and being considered for leadership opportunities. Many of the female participants pointed to the need for safe spaces and mentors to boost workers' confidence in the sector. For students and young women starting out, the family and community play an influential role. Studies have shown that supportive fathers who encourage their daughters to take on nontraditional professions contribute to their careers (UN Women Promundo 2017). This finding was reinforced by several interviewees describing their career decisions in the context of family dynamics and community relations. For women who are mid-career, participants report that there are few role models of other women who "broke the glass ceiling." Taking advantage of networking opportunities is also challenging, given women's outsized role in the home.

26 According to the Regional Action Plan on Gender-Based Violence in the Middle East and North Africa (World Bank 2021c), sexual harassment "refers to any form of unwelcome sex-based behavior (verbal, non-verbal, physical) that is offensive, humiliating or intimidating. It is common in public spaces and at workplaces."

27 The global water sector has been active in addressing workplace conditions through initiatives such as Equal Aqua, "a collaborative platform that aims to deepen the dialogue on gender diversity and inclusion in water sector jobs by connecting utilities, associations, representatives from the private sector, academia and local and international organizations and benchmarking gender inclusion in water organizations" (<https://www.worldbank.org/en/topic/water/brief/inclusive-water-institutions-platform>).

- **The effect of social norms and expectations:**

Across interviews and focus group discussions, women stated a preference to not work on sites or in the field. The belief that women cannot or should not do physically demanding work is held by both men and women. The beliefs and social traditions of individuals involved at all levels in the sector are very important in setting the tone for work, breaking norms, or challenging the status quo. Socialization, meanwhile, affects how both men and women perceive work. A consistent theme that emerged across interviews is the critical importance of managers who support breaking gender norms.

Because of their large size, utilities in MENA could be an important source of jobs for women engineers and technicians, even if the workplace improvements are small and incremental.

As discussed in chapter 4, energy utilities are a critical part of the energy transition as they move capital from fossil fuel assets to renewables. By achieving greater efficiency in transmission and distribution, they can lay the groundwork for the ambitious expansion of renewable energy. Utilities also have the advantage of being called upon to hire a large number of workers in a diverse set of technical and nontechnical roles. To attract more women, first MENA utilities need to examine their gender baseline, and be aware of the added value of a diversified labor force (as discussed in chapter 1), and proactively educate their hiring managers about it. Second, utilities can form a taskforce comprised of both male and female employees to devise actionable steps that management can take to increase the share of women. The scope of the taskforce can include revising human resource policies to make them more Female friendly and finding ways to reach out to more qualified women candidates. Other ideas include well-structured internships, safe transportation, and facilities for women.²⁸

“There is a change since 2012 in the MENA region about the importance of being active in the energy sector. Back then we really had to work hard to sell it to women. They would usually associate extractive energy with strong men sitting on platforms or people handling electricity. Or such male-orientated images.”

– Stakeholder interview in Lebanon, 2021

²⁸ Based on the WePOWER experience with participating utilities.

6. Next Steps

There are many facets to achieving quality opportunities for women in MENA's transition to renewable energy. While the advent of renewable energy creates new and untraditional options for women, the layers of traditional constraints that have limited women's roles in the economy will require that policy makers and sector stakeholders address several key obstacles. Solutions include a safe and equitable workplace environment, the synchronization of education and vocational preparation with job requirements, and childcare and other supports that help professionals achieve a work-life balance. Related efforts must occur across countries that, despite having a shared culture, are very diverse in nature.

A multi-stakeholder community to boost women's role in the energy sector across MENA countries is much needed. Plenty of organizations and networks support women's empowerment and leadership in the region. However, few regionwide professional networks facilitate women's entry into the workforce of the energy and power sector, as well as their advancement

across the value chain. One example is Women in Clean Energy, an initiative focused on promoting women in leadership in the sector under the umbrella of the MENA Clean Energy Business Council, though it is not clear how active this has been since its launch in 2020. Furthermore, collective engagement is often lacking among key energy stakeholders, such as power utilities and energy companies, as well as private employers, academia, and nongovernmental organizations. Much of the demand for supporting women's labor force participation and involvement in the sector takes place in isolated silos or top-down initiatives that are country specific, company focused, and driven by leadership (often lacking broad-based support).

In this context, consultations on the ground have highlighted the need for women's empowerment networks. According to interviews with representatives of women's networks working in the energy field, a professional women's network would be a valuable resource. Here, women would have a safe and professional





Box 6.1

The South Asia WePOWER Network: A success story

Launched in 2018, the WePOWER network aims to promote women in the energy and power sector of eight South Asian countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. Since its establishment, WePOWER has grown exponentially—by the end of 2021 it had completed over 1,400 activities ranging from jobs created, internships, study tours to capacity building, and secured 28 partners. The network's focus is twofold: (1) to support women's inclusion in the workforce of energy projects and institutions; and (2) to promote a normative change for women and girls in science, technology, engineering, and mathematics (STEM) education.

With its diverse network of public and private stakeholders and an emphasis on locally driven initiatives, WePOWER has had an impressive reach, leading to tangible results on the ground. Its initiatives have led to the: (1) hiring of 328 women through job fairs, career counseling, mentorship programs, and so on; (2) recruitment of 690 interns and enrollment of 652 female students in study tours; and (3) participation of 11,156 female professionals in workshops and trainings. It has prompted infrastructural enhancements, resulting in more than 200 new women-friendly facilities. WePOWER also conducts workshops and seminars for mothers returning to the workplace, to promote retention.

Source: WePOWER Network [website](#) and charter.

space to exchange ideas, discuss challenges without judgement, and build confidence. It is only recently that the power and influence of women's networks have started to be researched, characterized, and acknowledged (Bower 2019). The impact of women's networks in “tough” sectors such as energy is significant. Since the number of women on the inside is limited, there is great value to them sharing their experience, knowledge, and advice on how to navigate employment opportunities and rise up the career ladder in a male-dominated industry.

Learning from similar networks that support women in energy in countries around the world, a coalition of local, regional and international partners, among them the World Bank, plan to establish RENEW-MENA. This initiative would draw from the experience of the WePOWER Network in South Asia (box 6.1) to promote women's representation and status in energy in the MENA region. It would tap women's professional networks to provide access to role models and mentorship, build women's confidence, and create safe spaces in which to discuss challenges and share opportunities.

The main objectives of RENEW-MENA are to (1) increase women's economic participation across the energy sector value chain, and specifically in clean energy transition jobs; **(2) encourage better workplace conditions** in the private and public sectors; **(3) combat widespread gender stereotypes** about women's roles in STEM fields; and **(4) increase the visibility of women in the sector.**

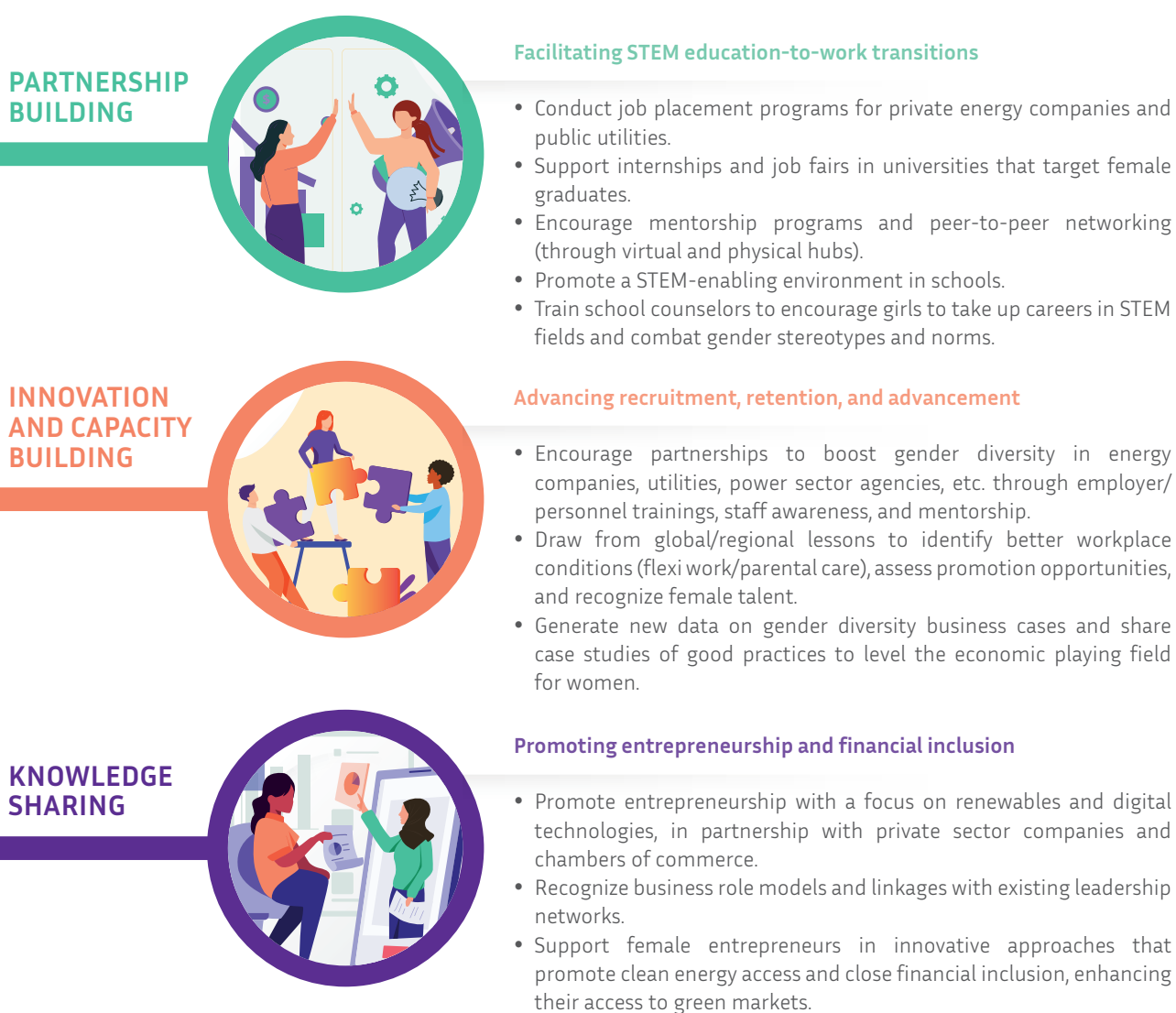
In collaboration with similar networks—the Global Women's Network for the Energy Transition (GWNET); the Swedish Power Women Network (Kraftkvinnorna); and the Nordic Energy Equality Network (NEEN) (see box 6.2)—RENEW-MENA will engage with government utilities and agencies, the private sector, development

partners and donors, academia, and community-based organizations to meet these objectives. It will also focus on partnerships and private sector collaboration, innovative programming and capacity building for individual and institutional members, promotion of knowledge sharing at

the country and regional levels (figure 6.1), direct support to operations and client engagement, and capacity building.²⁹ RENEW will leverage the World Bank's engagement in countries to expand its reach to stakeholders, influence policy, and coordinate efforts.

Figure 6.1 RENEW's mission

To elevate women's participation and leadership role as well as opportunities for entrepreneurship in the energy sector across the Middle East and North Africa.



Note: STEM = science, technology, engineering, and mathematics.

²⁹ To be discussed and agreed upon in a closed session with key partners such as WePOWER-SAR, Kraftkvinnorna, NEEN, and others. Specific objectives will likely change based on the outcomes of the meeting.

Box 6.2

The power of networks: Examples from Sweden and the Nordic region

Kraftkvinnorna started in 2015 as an exclusive network promoting women's equality in the energy sector and has grown to become a nongovernmental organization owned by its members. Today, the network has 785 members with Facebook as its main communication platform; it also has 2,195 followers on Instagram and 1,465 followers on Twitter. Kraftkvinnorna's board is elected by its members annually. The network promotes gender equality in the energy sector in three ways:

- **Promoting the visibility of role models:** The organization chooses a "Power woman of the year" in Sweden to represent Kraftkvinnorna and women in the energy sector, acknowledging her role and achievements. It creates a list of women in the energy sector to be included in panels and boards, help firms with recruitment, and provides a platform for members to showcase their daily work on social media.
- **Advocacy for equality:** Kraftkvinnorna advocates for women's equality by participating in workshops with the Ministry of Energy, inviting ministers and executives to panel discussions, creating campaigns in association with Sweden's annual interactive political discussion event "Almedalen Week," writing editorials and articles, conducting research to identify potential employers in the sector, and producing a podcast that highlights inequalities and certifies seminars and panel discussions as "gender equal."
- **Strengthening women in the energy sector:** The network holds workshops and distributes a handbook to network members and sponsors that assists them in strengthening equality in their workplace; supports a mentorship program; and announces job opportunities within the network. Members attend conferences (getting free tickets when colleagues are speaking), wear promotional items such as a necklace with the Power Women logo, and otherwise build cohesion. Kraftkvinnorna also collaborates with sister networks and has helped Finland, Norway, and Denmark create their own networks such as the Nordic Energy Equality Network (NEEN).

The Kraftkvinnorna network is sponsored by energy companies and the Swedish Energy Agency. As of spring 2022, there were 24 sponsors with more energy companies expressing their interest in supporting member activities. Members pay a yearly fee of SKr200 to support the organization.

The **Nordic Energy Equality Network (NEEN)** was launched in 2019 after research was conducted to identify key challenges and solutions for women in the energy sector. While the issue of sustainable, clean energy is an issue that affects everyone, not all perspectives are heard. The aim of NEEN is to highlight such issues and develop tools for improving gender balance and diversity in the energy sector. Gathering statistics across the energy sector in the Nordic region is one important pillar of the network. As an action oriented organization, it also:

1. Organizes and participates in conferences and networking events that bring together academic, industrial, and public sector actors.
2. Connects with other networks in the region and globally such as Kraftkvinnorna in Sweden, Women in Energy – Iceland, Global Women's Network for the Energy Transition (GWNET) and the Clean Energy Education & Empowerment (C3E) Initiative to share success stories and best practices to engage women.
3. Supports and communicates about inclusive efforts such as female mentorship programs, female entrepreneurship and showcasing role models.
4. Offers a list of female experts within the Nordic countries. The list may be used by media, event organizers, recruiters or anyone who is looking for skills within the energy sector. Link to the expert list: <https://neen.network/experts/>.

Source: <https://www.kraftkvinnorna.se/>; <https://neen.network/>.

A series of activities will be conducted in preparation for the launch and operationalization of RENEW. Once the initial assessment was complete, the World Bank hosted a technical workshop to present the findings to a select group of stakeholders in order to seek their technical guidance and feedback on the operationalization, sustainability, and likely impact of RENEW. Based on the workshop's outcomes, the team will focus on the following activities:

- Build ownership of the findings and the new network through wide outreach and mapping of institutional partners and members.
- Engage with the Bank to incorporate RENEW in the design of project investments to contribute to a strong gender logic chain in operations by identifying gender gaps in the sector,

presenting interventions that respond to closing those identified gaps and incorporating sex-disaggregated metrics that measure progress made.

- Develop branding, communications, and knowledge sharing for RENEW, building a community of practice.
- Identify five strategic partners and agree on key activities to be announced during the launch.
- Host a formal high-level launch.
- Establish a formal governance structure, with the first Steering Committee meeting planned in calendar year 2022.
- Set up a RENEW Advisory Committee and units for fundraising, partnership building, and maintaining momentum.
- Implement a monitoring framework with pillars and indicators, as shown in table 6.1.

Table 6.1 An example monitoring framework for RENEW

Key pillars	Indicators
Facilitating science, technology, engineering, and mathematics (STEM) education-to-work transitions	Number of new jobs filled by women among institutional members (of total new jobs filled)
	Share of female engineers recruited among institutional members (of total engineering positions)
	Number of internship and apprenticeship opportunities created by institutional members (disaggregated by gender)
	Number of students benefitting from career guidance opportunities organized by institutional members (disaggregated by gender)
Advancing recruitment, retention, and advancement	Number of role models identified to support young women in the early stages of their career
	Number of beneficiaries benefiting from mentorships, internships, and other skills that promote their career
Promoting entrepreneurship and financial inclusion	Number of institutional members reporting new measures to improve workplace conditions for women
	New financing raised for female entrepreneurs in energy-related areas
Expanding the RENEW network	Number of RENEW-branded events in the Middle East and North Africa
	Number of RENEW institutional members
	Number of RENEW individual members

Note: Targets will be defined after establishing RENEW and during its first phase of implementation.

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Appendix A.

Methodology

The objective of this regional assessment is to provide a cross-country snapshot of the status of women in the energy sector as well as their constraints/opportunities in terms of career decision-making, access to energy jobs, and professional development in the workplace. The assessment is not exhaustive and given wide variations in the availability of statistics, the methodology used to collect sector-specific data points and their presentation in the assessment may vary considerably. Its main purpose is to provide a preliminary analytical reference to underpin the urgent call for boosting women's status in the sector and recommend concrete actions to be implemented by the Regional Network in Energy for Women (RENEW) in the Middle East and North Africa.

To understand the gendered landscape of MENA's energy sector, a mixed method approach was used that included:

- i. A desk review of secondary sources to help shed light on the status of women and the gendered realities in the MENA countries, which presented general data points and then focused on the energy sector.
- ii. Quantitative analysis of key employment micro-data from labor force surveys in select countries, depending on their availability. Data are disaggregated by type of position and category of work whenever possible.
- iii. Focus group discussions with educators and gender champions in the Arab Republic of Egypt.
- iv. Semi-structured interviews with select gender champions working in the sector, private sector players, and civil society organizations.

Country-level assessments were carried out by individual and/or consultant firms based in the respective countries so as to build on informal networks and support outreach to stakeholders on the ground, especially given the niche topic and need for collecting new and hard-to-access data. However, given the COVID-19 context, the majority of the qualitative data work was carried out virtually.

A.1. DESK REVIEW

A desk review of secondary sources was carried to provide country perspectives and regional comparison, which relied strongly on international indices and seminal reports such as the World Development Indicator Index (latest available data); Women Business and the Law (2021); Enterprise Surveys (latest available data); Regional Gender Based Violence Action Plan (2021); *Care Work and Care Jobs for the Future of Decent Work* (ILO 2018); *Renewable Energy: A Gender Perspective* (IRENA 2019); *Stepping Up Women's STEM Careers in Infrastructure: An Overview of Promising Approaches* (Schomer and Hammond 2020); and *Towards an Equal Future: Reimagining Girls' Education through STEM* (UNICEF and ITU 2020).

Analysis of micro-data was carried out drawing from the Egypt Labor Force Survey (2019), Jordan Labor Force Survey (2016), and Lebanon Labor Force and Household Condition Survey (2018–19).

Data on women's employment in the energy sector were not readily available. On a global scale, the International Renewable Energy Agency estimates that women account for 32 percent of workers in

the renewable energy sector, and for less than 25 percent in the energy sector as a whole. National labor force surveys are a good source for country-specific data on wages, occupations, and sectors of employment. These are standardized and use the International Standard Industrial Classification (ISIC) codes that have various levels of economic categories (UNDESA 2008). At the broadest, there is the one-digit level that encompasses nine main levels, whereas the highest is the six-digit level. To extract meaningful data on economic activity in the energy sector, data have to be classified by the four- or six-digit level.

However, data in the MENA region are somewhat limited because:

- Labor force surveys are not readily available or accessible
- Available labor force survey numbers are outdated
- Detailed four- or six-digit level ISIC variables are not included/collected in the dataset

Once the detailed four- or six-digit-level data were extracted, they were categorized into renewable and nonrenewable energy sectors. Further disaggregation includes the percentage of employed women in each sector, and occupational roles (e.g., management, technical, clerical, plant and machine operations).

A.2. PRIMARY DATA COLLECTION

A combination of key informant interviews and focus group discussions was carried out across the region; most were virtual due to the pandemic. Semi-structured interviews with identified stakeholders in Algeria, Jordan, Saudi Arabia, Lebanon, Iraq, and West Bank and Gaza represented a range of focus areas and seniority levels (for more details about the interviewees, see table A.1). Interviewees were selected based on their knowledge and involvement in the sector, with care taken to ensure diversity (across young professionals, executives, public sector employees, private sector employees, nongovernmental organizations, and so on). The interview questions were structured around key areas, some of which were cross-cutting such as education-to-work transitions, staffing and recruitment, work environment (conditions) and infrastructure, the enabling environment, and issues related to norms. Focus group discussions took place in Algeria and Egypt and among regional gender champions. Additionally, online surveys for this assessment were carried out in Algeria to complement the interviews and discussions.

Table A.1 Details on primary data collection, by country

ALGERIA	
Female	Male
Online surveys (2 total)	
7 private sector respondents	11 private sector respondents
10 students	n.a.
Stakeholder interviews with private sector	
5	21
Focus group discussions (3)	
19 students	11 students
	5 company representatives
	1 enterprise cluster representative

EGYPT, ARAB REPUBLIC OF	
Female	Male
Focus group discussions (4 total)	
9 educators 2 students	4 educators 2 students
IRAQ	
Female	Male
Stakeholder interviews with private sector / NGO (semi-structured)	
3	3
JORDAN	
Female	Male
Stakeholder interviews with private sector / NGO (semi-structured)	
5	1
LEBANON	
Female	Male
Stakeholder interviews with private sector / NGO (semi-structured)	
6	0
SAUDI ARABIA	
Female	Male
Stakeholder group consultation (1 NGO)	
2	6
WEST BANK and GAZA	
Female	Male
Stakeholder interviews with government / private sector (semi-structured)	
12	5
REGIONAL / GLOBAL	
Female	Male
Stakeholder consultation with private sector, NGO, and academia (1)	
22 gender champions	4 gender champions
Stakeholder consultation (partners)	
4 gender champions	n.a.

Note: NGO = nongovernmental organization.

Appendix B.

Gender in Energy: Country Profiles

Algeria

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	66	2020	43	2020
Percentage of female graduates in STEM fields*	60	2021	53	2021
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	19	2019	21	2020
Ratio of female to male labor force participation (%)	25	2019	30	2019
Unemployment, female (% of female labor force)	20	2019	17	2019
Unemployment, male (% of female labor force)	10	2019	8	2019
Youth unemployment, female (% of female labor force)	46	2019	45	2019
Youth unemployment, male (% of male labor force)	26	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

Sources for all country tables: World Bank Development Indicators; World Bank Enterprise Surveys; Women, Business, and the Law (2021) unless otherwise noted.

*This includes science, engineering, and information and communication technology (ICT) in all countries unless otherwise indicated; 2018 data based on UNESCO Report 2021.

**Based on authors' analysis of labor force surveys (latest available), primary data collection, and/or existing analysis; ~ILOSTAT accessed January 2021.

Bahrain

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	79	2020	43	2020
Percentage of female graduates in STEM fields*	60	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	47	2019	21	2020
Ratio of female to male labor force participation (%)	42	2019	30	2019
Unemployment, female (% of female labor force)	5	2019	18	2019
Unemployment, male (% of female labor force)	1	2019	8	2019
Youth unemployment, female (% of female labor force)	16	2019	45	2019
Youth unemployment, male (% of male labor force)	4	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	n.a.	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	Yes	n.a.	n.a.	n.a.

Djibouti

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	5	2011	43	2020
Percentage of female graduates in STEM fields*	n.a.	n.a.	n.a.	n.a.
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	54	2019	21	2020
Ratio of female to male labor force participation (%)	73	2019	30	2019
Unemployment, female (% of female labor force)	11	2019	18	2019
Unemployment, male (% of female labor force)	11	2019	8	2019
Youth unemployment, female (% of female labor force)	22	2019	45	2019
Youth unemployment, male (% of male labor force)	21	2019	21	2019

Firms with majority female ownership (% of firms)	7	2013	4	2019
Firms with female top manager (% of firms)	14	2013	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	n.a.	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	n.a.	n.a.	n.a.

Egypt, Arab Republic of

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	39.81	2018	43	2020
Percentage of female graduates in STEM fields*	41	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	20.00	2019	21	2020
Ratio of female to male labor force participation (%)	25.93	2019	30	2019
Unemployment, female (% of female labor force)	21.33	2019	18	2019
Unemployment, male (% of male labor force)	6.73	2019	8	2019
Youth unemployment, female (% of female labor force)	53.35	2019	45	2019
Youth unemployment, male (% of male labor force)	18.21	2019	21	2019
Firms with majority female ownership (% of firms)	2.30	2019	4	2019
Firms with female top manager (% of firms)	6.30	2019	7	2019
Share of women in energy sector**	9	2019	n.a.	n.a.
Share of female workers in science and engineering~	8	2019	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

Iraq

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	11.86	2004	43.12%	2020
Percentage of female graduates in STEM fields*	n.a.	n.a.	n.a.	n.a.
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	12.06	2019	21.25%	2020
Ratio of female to male labor force participation (%)	15.52	2019	29.85%	2019
Unemployment, female (% of female labor force)	30.59	2019	17.67%	2019
Unemployment, male (% of female labor force)	10	2019	7.58%	2019
Youth unemployment, female (% of female labor force)	62.61	2019	45.07%	2019
Youth unemployment, male (% of male labor force)	21.59	2019	21.18%	2019
Ratio of female to male youth unemployment (% ages 15-24)	6	2012		
Firms with majority female ownership (% of firms)	N.A.	2011	4.30%	
Firms with female top manager (% of firms)	2.30	2011	6.50%	2019
Share of women in energy sector**	6	2012	n.a.	n.a.
Share of female workers in science and engineering~	8	2012	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

Jordan

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	37	2020	43	2020
Percentage of female graduates in STEM fields (engineering only)*	35	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	16	2019	21	2020
Ratio of female to male labor force participation (%)	23	2019	30	2019
Unemployment, female (% of female labor force)	24	2019	18	2019

Unemployment, male (% of female labor force)	15	2019	8	2019
Youth unemployment, female (% of female labor force)	51	2019	45	2019
Youth unemployment, male (% of male labor force)	34	2019	21	2019
Firms with majority female ownership (% of firms)	8	2019	4	2019
Firms with female top manager (% of firms)	3	2019	7	2019
Share of women in energy sector**	6	2016	n.a.	n.a.
Share of female workers in science and engineering~	14	2019	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2019	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	Yes	2019	n.a.	n.a.

Kuwait

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	82	2020	43	2020
Percentage of female graduates in STEM fields*	n.a.	n.a.	n.a.	n.a.
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	52	2019	21	2020
Ratio of female to male labor force participation (%)	57	2019	30	2019
Unemployment, female (% of female labor force)	6	2019	18	2019
Unemployment, male (% of female labor force)	1	2019	8	2019
Youth unemployment, female (% of female labor force)	29	2019	45	2019
Youth unemployment, male (% of male labor force)	10	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

Lebanon

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	21	1985	43	2020
Percentage of female graduates in STEM fields*	n.a.	n.a.	n.a.	n.a.
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	26	2019	21	2020
Ratio of female to male labor force participation (%)	32	2019	30	2019
Unemployment, female (% of female labor force)	10	2019	18	2019
Unemployment, male (% of male labor force)	5	2019	8	2019
Youth unemployment, female (% of female labor force)	21	2019	45	2019
Youth unemployment, male (% of male labor force)	15	2019	21	2019
Firms with majority female ownership (% of firms)	5	2019	4	2019
Firms with female top manager (% of firms)	6	2019	7	2019
Share of women in energy sector**	5	2018/2019	n.a.	n.a.
Share of female workers in science and engineering~	21	2019	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2019	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	Yes	2019	n.a.	n.a.

Libya

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	64	2003	43	2020
Percentage of female graduates in STEM fields**	n.a.	n.a.	n.a.	n.a.
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	36	2019	21	2020
Ratio of female to male labor force participation (%)	52	2019	30	2019
Unemployment, female (% of female labor force)	24	2019	18	2019
Unemployment, male (% of female labor force)	15	2019	8	2019
Youth unemployment, female (% of female labor force)	68	2019	45	2019
Youth unemployment, male (% of male labor force)	42	2019	21	2019

Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.
Experience of some form of intimate partner violence among women (lifetime or past 12 months)	n.a.	n.a.	35	2017

Morocco

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	42	2020	43	2020
Percentage of female graduates in STEM fields*	44	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	23	2019	21	2020
Ratio of female to male labor force participation (%)	21	2019	30	2019
Unemployment, female (% of female labor force)	10	2019	18	2019
Unemployment, male (% of male labor force)	9	2019	8	2019
Youth unemployment, female (% of female labor force)	23	2019	45	2019
Youth unemployment, male (% of male labor force)	22	2019	21	2019
Firms with majority female ownership (% of firms)	3	2019	4	2019
Firms with female top manager (% of firms)	5	2019	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2019	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2019	n.a.	n.a.

Oman

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	57	2020	43	2020
Percentage of female graduates in STEM fields*	65	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	38	2019	21	2020
Ratio of female to male labor force participation (%)	43	2019	30	2019
Unemployment, female (% of female labor force)	7	2019	18	2019
Unemployment, male (% of female labor force)	1	2019	8	2019
Youth unemployment, female (% of female labor force)	36	2019	45	2019
Youth unemployment, male (% of male labor force)	8	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

Qatar

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	59	2020	43	2020
Percentage of female graduates in STEM fields*	55	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	58	2019	21	2020
Ratio of female to male labor force participation (%)	60	2019	30	2019
Unemployment, female (% of female labor force)	0.4	2019	18	2019
Unemployment, male (% of female labor force)	0.1	2019	8	2019
Youth unemployment, female (% of female labor force)	2	2019	45	2019
Youth unemployment, male (% of male labor force)	0.2	2019	21	2019

Firms with majority female ownership (% of firms)	n.a.	n.a.	4.	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector***	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man?	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man?	No	2021	n.a.	n.a.

Saudi Arabia

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	74	2020	43	2020
Percentage of female graduates in STEM fields*	39	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Ratio of female to male labor force participation (%)	28	2019	30	2019
Unemployment, female (% of female labor force)	23	2019	18	2019
Unemployment, male (% of female labor force)	3	2019	8	2019
Youth unemployment, female (% of female labor force)	64	2019	45	2019
Youth unemployment, male (% of male labor force)	21	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	5-6	2021	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	Yes	2021	n.a.	n.a.

Syria

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	46	2019	43	2020
Percentage of female graduates in STEM fields*	54	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	16	2019	21	2020
Ratio of female to male labor force participation (%)	20	2019	30	2019
Unemployment, female (% of female labor force)	20	2019	18	2019
Unemployment, male (% of female labor force)	6	2019	8	2019
Youth unemployment, female (% of female labor force)	22	2019	45	2019
Youth unemployment, male (% of male labor force)	21	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	n.a.	n.a.	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

Tunisia

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	42	2019	43	2020
Percentage of female graduates in STEM fields*	59	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	28	2019	21	2020
Ratio of female to male labor force participation (%)	36	2019	30	2019
Unemployment, female (% of female labor force)	22	2019	18	2019
Unemployment, male (% of female labor force)	12	2019	8	2019
Youth unemployment, female (% of female labor force)	38	2019	45	2019
Youth unemployment, male (% of male labor force)	35	2019	21	2019

Ratio of female to male youth unemployment (% ages 15-24)				
Firms with majority female ownership (% of firms)	8	2020	4	2019
Firms with female top manager (% of firms)	10	2020	7	2019
Share of women in energy sector**	27	2014	n.a.	n.a.
Share of female workers in science and engineering~	18	2010	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	Yes	2021	n.a.	n.a.

United Arab Emirates

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	66	2020	43	2020
Percentage of female graduates in STEM fields*	58	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	53	2019	21	2020
Ratio of female to male labor force participation (%)	56	2019	30	2019
Unemployment, female (% of female labor force)	6	2019	18	2019
Unemployment, male (% of female labor force)	1	2019	8	2019
Youth unemployment, female (% of female labor force)	13	2019	45	2019
Youth unemployment, male (% of male labor force)	5	2019	21	2019
Firms with majority female ownership (% of firms)	n.a.	n.a.	4	2019
Firms with female top manager (% of firms)	n.a.	n.a.	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	7	2018	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	Yes	2021	n.a.	n.a.

West Bank and Gaza

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	54	2020	43	2020
Percentage of female graduates in STEM fields*	52	2018	53	2018
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	19	2019	21	2020
Ratio of female to male labor force participation (%)	26	2019	30	2019
Unemployment, female (% of female labor force)	41	2019	18	2019
Unemployment, male (% of female labor force)	21	2019	8	2019
Youth unemployment, female (% of female labor force)	67	2019	45	2019
Youth unemployment, male (% of male labor force)	35	2019	21	2019
Ratio of female to male youth unemployment (% ages 15-24)				
Firms with majority female ownership (% of firms)	1	2019	4	2019
Firms with female top manager (% of firms)	1	2019	7	2019
Share of women in energy sector**	10-15	2021	n.a.	n.a.
Share of female workers in science and engineering~	18	2020	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	No	2019	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2019	n.a.	n.a.

Yemen

Education	Percentage	Year	MENA average	Year
Tertiary school enrollment, female (gross, % of relevant age group)	43	2020	43	2020
Percentage of female graduates in STEM fields*	n.a.	n.a.	n.a.	n.a.
Economic opportunity (incl. entrepreneurship)				
Labor force participation rate, female (% of female population, 15-64)	53	2020	21	2020
Ratio of female to male labor force participation (%)	68	2020	30	2019
Unemployment, female (% of female labor force)	6	2020	18	2019
Unemployment, male (% of female labor force)	7	2020	8	2019
Youth unemployment, female (% of female labor force)	19	2020	45	2019
Youth unemployment, male (% of male labor force)	17	2020	21	2019
Firms with majority female ownership (% of firms)	1	2013	4	2019
Firms with female top manager (% of firms)	2	2013	7	2019
Share of women in energy sector**	n.a.	n.a.	n.a.	n.a.
Share of female workers in science and engineering~	1%	2014	n.a.	n.a.
Can a woman work in an industrial job in the same way as a man	Yes	2021	n.a.	n.a.
Can a woman work in a job deemed dangerous or hazardous in the same way as a man	No	2021	n.a.	n.a.

