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# Gender in Energy Interventions in Fragile and Conflict Situations

## IN THE MIDDLE EAST AND NORTH AFRICA REGION

Insights from Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza


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# List of Acronyms

| | |
|---|---|
| **EDL** | Électricité du Liban |
| **FCV** | Fragility, Conflict, and Violence |
| **FCS** | Fragile and Conflict Situations |
| **FGD** | Focus Groups Discussion |
| **FHH** | Female-Headed Household |
| **FSI** | Fragile State Index |
| **GBV** | Gender-Based Violence |
| **GDP** | Gross Domestic Product |
| **IDP** | Internally Displaced Person |
| **ILO** | International Labour Organization |
| **MENA** | Middle East and North Africa |
| **MHH** | Male-Headed Household |
| **MFI** | Microfinance Institution |
| **NGO** | Nongovernmental Organizations |
| **OECD** | Organisation for Economic Co-operation and Development |
| **PCBS** | Palestinian Central Bureau of Statistics |
| **PV** | Photovoltaics |
| **STEM** | Science, Technology, Engineering, and Mathematics |
| **UN** | United Nations |
| **UNHCR** | UN High Commissioner for Refugees |
| **UNOPS** | UN Office for Project Services |
| **WBG** | World Bank Group |

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Chapter 1

# Introduction

The Middle East and North Africa (MENA) is home to some of the most fragile situations and conflict-affected population in the world. With one in five people in the region living near conflict, nearly half of the economies of the MENA region are classified as fragile and conflict situations (FCSs) (Corral et al. 2020). In such challenging contexts, the provision of basic and essential services, such as electricity, becomes a priority to mitigate the heavy burden of conflict and instability, particularly on the most vulnerable women and men, who are affected in different ways.

The study of intersecting gender, energy, and fragility issues is critical for designing effective interventions that can tackle the challenges of reliable, affordable, and quality electricity access and use, while also closing gaps in pressing economic and social inequities, particularly in FCS. While there is a large body of literature on the intersection between energy and gender, fragility and gender, and energy and fragility, separately, there is very little coverage of the dynamic among the three elements.

The objective of this report is to advance the understanding of the gender-energy-fragility nexus, with a focus on some of MENA's fragile and conflict situations, namely, Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza. The research and data cover (i) an overview (and typology) of the gender, energy, and fragility landscapes in the studied countries, (ii) related evidence and analytics drawn from the World Bank's energy interventions and operations in the MENA region, and (iii) distilled policy recommendations tailored to the contexts of the examined countries.

The highlighted inequalities and vulnerabilities of the gender-energy-fragility nexus are examined through a framework that locates these interactions in three distinct domains: (i) household, (ii) community, and (iii) markets. The choice of this framework was based on the domains' well-defined and extensive boundaries that affect women and men and the ways they interact differently with gaps in energy access and use, be it at home (household demand management), as part of their community (related to safety or infrastructure decision-making), or as it pertains to participation in the market (endowments, employment, and entrepreneurship).

The main added value of the analysis is that it leverages empirical evidence collected by the World Bank to highlight regional and country-specific issues. Although the included data and insights were obtained from existing and past World Bank operations and interventions in the studied countries, their relevance to the work of the wider development community cannot be overstated. Ultimately, this report aims to provide guidance and recommendations

**Box 1.1**

### What Does the Phrase Fragility, Conflict, and Violence Entail?

According to the World Bank's FCV strategy, "the three components—fragility, conflict, and violence—are often interrelated and mutually reinforcing." Separately, these three components can be defined as follows:

**Fragility**
refers to countries or economies with deep governance and institutional issues. Fragile situations tend to be characterized by deep grievances and/or high levels of exclusion, lack of capacity, and limited provision of basic services to the population. Fragile situations tend also to be characterized by the inability or unwillingness of the state to manage or mitigate risks, including those linked to social, economic, political, security, or environmental and climatic factors.

**Conflict**
refers to countries in active conflict. Violent conflicts occur when organized groups or institutions, sometimes including the state, use violence to settle grievances or assert power.

**Violence**
refers to countries with high levels of interpersonal and gang violence, with major destabilizing impact. GBV and violence against children are also integrated into this definition.

*Source:* World Bank 2020c.

Studies have shown that, during times of crisis, women are likely to be the first to lose their jobs and prospects for income, that unpaid and invisible work for women increases, and that norms surrounding their mobility and decision-making become more restrictive.

for development practitioners to consider when designing and implementing gender-inclusive energy operations in contexts of fragility, conflict, and violence (FCV) in, but not exclusive to, MENA (see box 1.1). The proposed framework, based on the household, community, and markets domains, could inform project-specific entry points that can help bridge identified gender gaps.

Additionally, the economic and social impact of the COVID-19 health crisis could be substantial in the FCS context—exacerbating already weak human capital and local job markets. In the energy sector, it could have both direct and indirect repercussions on gender equality and women's economic empowerment agenda. Studies have shown that, during times of crisis, women are likely to be the first to lose their jobs and prospects for income, that unpaid and invisible work for women increases, and that norms surrounding their mobility and decision-making become more restrictive. Furthermore, poverty rates are expected to increase and risks of gender-based violence (GBV) to intensify as COVID-19 preventative measures, such as social distancing, school closures, and quarantines, are put in place. Given the important role that infrastructure—including energy—can play in offsetting the economic impacts of the global health crisis, there is an even more urgent imperative to protect and adapt women's central role in the energy-related development and policy process.

This report is structured as follows: Following the introduction, chapter 2 outlines the gender, fragility, and energy profiles of the examined contexts—Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza. Chapter 3 summarizes the surveyed literature on the intersection of gender, fragility. and energy and presents the analytical framework around which the results have been structured. The adopted methodologies and sources of data are outlined in chapter 4. Then, in chapter 5, the collected data and generated insights are discussed. The report concludes with the main lessons learned and recommendations in chapter 6. While there is recognition that the effects of COVID-19 will impact women and men in different and significant ways, the report does not cover the subject, as there is little data on sector implications during this early stage of the pandemic.

Chapter 2

# Overview of Gender, Fragility, and Energy Profiles

Examining the current gender, fragility, and energy conditions, dynamics and their interconnections is critical for understanding the space in which development efforts would be conducted. Additionally, an early scan of the landscapes of these components would help identify entry points for more effective and targeted operations and interventions. In this chapter, the report outlines the topology of gender, fragility, and energy, separately, in each of the studied contexts of Iraq, Lebanon, Republic of Yemen, Iraq, and the West Bank and Gaza.

The purpose of this chapter is to provide useful background information for development agencies and practitioners who are embarking on energy operations and interventions in the concerned locations or in other contexts with underlying economic, social, and cultural similarities. There are other fragility, conflict, and violence (FCV) contexts in the Middle East and North Africa (MENA) that have not been covered in this report due to lack of data and direct engagement, such as Syria and Libya. However, many of the discussed dynamics are potentially transferable to those countries.

## THE GENDER LANDSCAPE

Gender inequalities, being a common global issue, tend to intensify in regions of instability, conflict, and war. In addition to the political and security contexts, social norms play a key role in shaping further gender inequalities in the Middle East and more specifically in Arab societies by affecting women's engagement in the public sphere. These norms prevent women from pursuing an advanced level of education, stop them from being involved in specific professions and sectors, and sometimes prevent them from engaging in any kind of employment outside of the household.

The MENA region has the lowest female labor force participation rates across all regions of the world, with only 22 percent of women participating in the labor market (either as employed or actively seeking work) compared to 77 percent of men (World Bank 2018b). When women do not work, countries lose out: women generate only 18 percent of gross domestic product (GDP) in the region, compared to a global average of 37 percent. If countries like Iraq, Lebanon, and Republic of Yemen reduce the gender gap in their labor force participation by a quarter, their GDP (based on purchasing power parity) would increase, respectively, by 11, 9, and 8 percent (ILO 2017).

Gender dimensions heavily impact women's positioning in the energy sector, minimizing their chances to participate in this field as employees, reformers, and consumers. Further to the fact that this gender deficiency translates into a sectorial loss, women tend to be the individuals paying the higher

prices for energy scarcity. In what follows, the report presents an overview of these dimensions in the four contexts covered. Selected indicators that cover gender aspects based on the proposed framework on the household, community, and markets levels are listed in Table 4.1.

### *Iraq*

In Iraq, the energy sector employs hundreds of thousands of people with a very limited involvement of women (Iraq Energy Institute 2019). In addition to the negative societal attitude toward female participation in energy jobs or in the job market in general, some critical institutional challenges persist, such as the poor working conditions and the lack of protection from abuse and harassment. Iraqi women still endure the impact of the 2003 war and the ISIS invasion of Mosul (UN Women 2018). Although the literacy rate among Iraqi women is high, their involvement in primary to tertiary education is significantly lower than men's. Furthermore, despite the existence of laws that grant women equal access to the workplace, institutions tend to hire more men than women (Vilardo 2018). These figures result in a reduced participation in the workforce. Women tend to stay at home to take care of domestic and caregiving activities. However, with the succession of wars and displacement, women's roles inside the household shifted toward more leadership responsibilities, such as generating the household income. According to significantly enrolled in the informal sector, despite the lack of official numbers. Iraqi women face other logistical challenges, such as the restriction of mobility, especially in areas that witnessed violence, in addition to deficiency in electricity, challenging their house-based projects and income-generating activities (Canpolat and Maier 2019).

### *Lebanon*

In Lebanon, women have a high literacy rate and are notably enrolled in tertiary education with rates that are equal or even exceeding those of their male counterparts (World Bank 2020c). However, the gap still persists in the labor market, as men tend to be more employed than women, particularly in the formal sector (Latif 2017). The absence of safe and secure transportation systems is resulting in female immobility, which is a main factor contributing to gender gaps in the transition between education and work, in addition to the social norms and the reputation around some professions, such as in the energy sector (Ahmad, Kantarjian, et al. 2019). Other factors related to assumptions about the role of women inside the house and in caregiving impede their high involvement in the workforce (El Zyr Assy and Sayed 2018). Also, although women's occupancy rate in senior management positions is relatively high compared to the other reviewed economies, they actually occupy a small share of these positions, according to World Bank data (World Bank 2020c). Women in Lebanon are paid 23.4 percent less than men for the same time and quality of work, despite the existence of a law that mandates equal remuneration (Qanenji and Hariri 2019). In addition to its structural problems, Lebanon has endures an influx of refugees since 2012, resulting in a complex gender situation. Refugee women are more exposed than others to intimate and community violence and less engaged in the public sphere, with little to no chance of being formally employed and fairly paid (Avis 2017).

### *Republic of Yemen*

Although Yemeni women went through waves of activism to improve their status, the ongoing armed conflicts, dispute between conformists and socialists, and the tribal customs and mentalities continue to limit any advancement (UN Women 2018). Child marriage is one of the most persistent challenges to the eradication of gender inequality in Republic of Yemen, impacting the enrollment of women in education, in work, and in the decision-making processes. Republic of Yemen has the lowest literacy rate among the Arab countries, at 35 percent.[1] It also scores the lowest rates for enrollment in primary to tertiary education and participation in the workforce for women in the region. Female net enrollment rates at the primary, secondary, and tertiary levels are 78, 40, and 6 percent, respectively (UNESCO 2016). Yemeni women constitute the highest unemployment rate in the region at 26 percent, more than double that of Yemeni men (ILO 2015). The ongoing war and military intervention affected men as the direct victims of arbitrary detention and forced recruitment, therefore increasing the burden carried by women and girls who run the households and who became more exposed to amplified forms of gender-based violence (GBV) inside the house and in the community (Oxfam 2016). The shift in gender roles took place with men unable to find employment playing a growing role inside the home and displaced women or those who have lost their husbands becoming increasingly involved in low-paid labor, noting that Republic of Yemen scores the highest gender wage gap in the economies under study with a 65 percent difference (IRC 2019). Yemeni women are currently absent in the legislative council, which diminishes the chances for legal changes that can protect women in their personal, social, and economic matters.

1 2004 data. See the World Bank Gender Data Portal, https://datatopics.worldbank.org/gender/.

**Table 2.1**

## Selected Gender Indicators in Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza

| Indicators | | Yemen, Rep. | Lebanon | Iraq | West Bank and Gaza |
|---|---|---|---|---|---|
| Household | Female headed households (% of households with a female head)[a] | 7.8 (2013) | 15 (2012) | 10 (2018) | 11.2 and 9.5 (2018) |
| | Proportion of time spent on unpaid domestic and care work, female (% of 24-hour day) | N/A | N/A | 24 (2007) | 20 (2013) |
| | Women participating in the three decisions: own health care, major household purchases, and visiting family (% of women, age 15–49) | N/A | N/A | 10 | N/A |
| | Percentage of ever-partnered women who suffered intimate partner physical and/or sexual violence (%)[b] | 67 | 21 | N/A | N/A[c] |
| Community | Ministry/cabinet seats held by women | 1/26 | 6/20 | 1/22 | 3/22 |
| | Proportion of women in national parliament (%) | 0 (2019) | 5 (2019 | 25 (2019) | 12.9 (2006) |
| | Presence of a gender-based violence law | No | Yes | No | No |
| | Presence of a sexual harassment law | No | No | No | No |
| | Law prohibit or invalidates child marriage | No | No | Yes | No |
| | Average marriage age (years) | 18.2 | 28.8 | 21.9 | 20.1 |
| | Fertility rate (births per woman) | 3.9 | 2.1 | 3 | 4.1 |
| | Percentage of women in the total number of persons not feeling safe walking alone at night (%)[d] | 68 | 56 | 30 | 68 |

**Table 2.1 (cont.)**

## Selected Gender Indicators in Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza

| Indicators | | Yemen, Rep. | Lebanon | Iraq | West Bank and Gaza |
|---|---|---|---|---|---|
| Market | Literacy rate, adult female (% of females ages 15 and above)[e] | 60.6 (2016) | 93.3 (2018) | 79.9 (2017) | 95.7 (2018) |
| | Female enrollment in tertiary school (%) | 6 | 64 | 12 | 54 |
| | Women in the labor force (% 15 above, modeled by ILO) | 5.8 | 23.5 | 12.5 | 19.5 |
| | Law mandates paid or unpaid maternity leave | Yes | Yes | Yes | Yes |
| | Female share of employment in senior and middle management (%) | N/A | N/A | N/A | 17.8 |
| | Female unemployment rate (%) | 54.4 | 10.4 | 30.9 | 41.9 |
| | Law mandates equal remuneration for females and males for work of equal value | No | No | Yes | Yes |
| | Law mandates nondiscrimination in employment based on gender | Yes | Yes | Yes | Yes |
| | Gender wage gap | 65 | 23.4 | N/A | 29.5 |
| | Firms with female top manager (% of firms) | 1.6 (2013) | 4.4 (2013) | 2.3 (2011) | 1.2 (2013) |

*Note:* The data mentioned in the table are obtained from the World Bank Gender Data Portal, https://datatopics.worldbank.org/gender/, the Oxfam report on the gender situation in Iraq (Vilardo 2018), in addition to the UN Women's (2018) data portal on Arab states, https://data.unwomen.org/data-portal. Some proportions and numbers were obtained from such websites such that of the Legal Agenda (Lebanon, https://legal-agenda.com/en/index.php) and other documents released by official bureaus of statistics in Lebanon and Palestine in addition to relevant international organizations' reports. Some of the indicators were listed despite the absence of data, or at least recent data, as they were mentioned in the literature as critical and impactful on the engagement, employment, and agency profiles of women.

a The data on female-headed households was taken from the following sources: Republic of Yemen (World Bank Gender Data Portal); Lebanon (Central Administration of Statistics); Iraq (Vilardo 2018); West Bank and Gaza (Palestinian Central Bureau of Statistics, http://www.pcbs.gov.ps/default.aspx).

b OECD 2020.

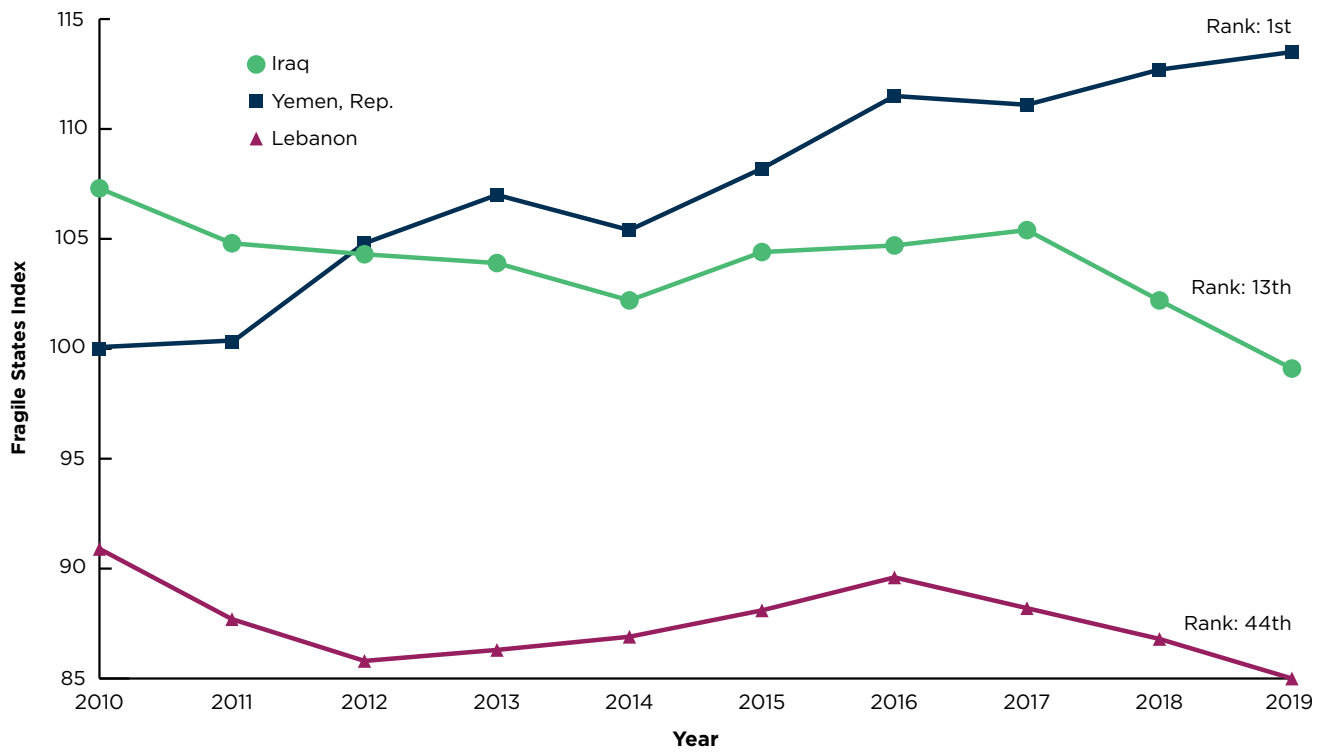
c For West Bank and Gaza, preliminary data (2019) shows that the percentage of married or ever-married women (18– 64 years) who experienced sexual or physical violence by their husbands throughout the 12 months preceding the interview is 7 and 17 percent, respectively.

d Based on the Social Institutions and Gender Index value (SIGI 2019)

e For Republic of Yemen, UNESCO (2016); for others, World Bank Gender Data Portal, https://datatopics.worldbank.org/gender/.

**Figure 2.1**

**Fragile States Index for Iraq, Lebanon, and Republic of Yemen**




*Source:* Messner et al. 2019.

### *West Bank and Gaza*

Because of varying political, economic, and security situations, women in West Bank and Gaza may experience dissimilar restrictions, but with a common aspect of discrimination, especially in the economic participation and employment (PCBS 2018). Despite achieving a high literacy rate and a considerable enrollment in primary and intermediate school in both regions, women's enrollment decreases at the more advanced levels, which is associated with a low employment rate (World Bank 2020c). Moreover, women, especially in Gaza, are significantly participating in the informal sector (estimated to be more than 40 percent, despite the lack of accurate data about the informal economy). These informal economic activities seem to proliferate among women in Gaza, especially where women have restricted ability to move or to participate in the formal or the public sector (Qazzaz and Adwan 2016). The increased participation in the informal economy comes in parallel with a high exposure to GBV and minimal personal agency and decision-making ability inside the household (UN Women 2018). Similarly, in a context where there is energy scarcity and expensive supply, women, especially in rural areas and in the Gaza Strip, endure the difficulties of obtaining energy, particularly when they are bearing the burden of domestic and agricultural work (Hilal and Nassar 2018).

## THE FRAGILITY LANDSCAPE

The MENA region has one of the highest number of conflicts worldwide. With a 24 percent share of the total number of global conflicts, second to Africa, the region's conflicts have greatly disrupted its economic growth potential, investments in critical infrastructure and human capital development

**Table 2.2**

**Selected 2019 FSI indicators (out of 10) for Iraq, Lebanon, and Republic of Yemen**

| Indicator | Iraq | Lebanon | Yemen, Rep. |
|---|---|---|---|
| Refugees and IDPs | 9.1 | 8.7 | 9.7 |
| Human flight and brain drain | 7.1 | 5.6 | 7.3 |
| Economic inequality | 6.7 | 5.2 | 7.3 |
| Public services | 8.7 | 5.1 | 9.8 |
| Economy | 5.3 | 6 | 9.7 |
| Factionalized elites | 9.6 | 9.6 | 10 |

*Source:* FSI 2020.

(United Nations; World Bank 2018).[2] Figure 1 shows the variation of the Fragile States Index (FSI)[3] between 2010 and 2019 for Iraq, Lebanon. and Republic of Yemen (Messner et al. 2019).[4] Out of a maximum fragility score of 120, Republic of Yemen ranked first—the most fragile state in the world—as a result of the lengthy civil war and deepening humanitarian crisis. Contrary to Republic of Yemen, where the fragility score has been increasing in recent years, Iraq (ranked 13) and Lebanon (ranked 44) have seen noticeable improvements in recent years, as shown in figure 1.

Since the four economies examined in this report (Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza) are at different levels of fragility, there is a need for a more tailored approach in identifying country-specific challenges and priorities. Recognizing that fragile and conflict situations (FCS) manifest themselves on a spectrum, and that there can be no one-size-fits-all approach, the World Bank Group has recently released its Strategy for Fragility, Conflict, and Violence 2020–2025, which aims at addressing the root causes and impacts of FCV and strengthening countries' resilience based on their specific position along the fragility spectrum and challenges (World Bank 2020d).

Some of the selected indicators that constitute the 2019 FSI are listed in table 2.2, which offers a more detailed view of the various elements that contribute to the fragility profile of Iraq, Lebanon and Republic of Yemen. A maximum value of 10 is assigned to each indicator, representing the worst score possible. Comparatively speaking, it is evident that the three countries have some common challenges: they carry a heavy burden of refugees and internally displaced persons (IDPs) as well as the concentration of wealth and power in the hands of factionalized elites. Iraq and Republic of Yemen seem to particularly suffer from human flight and brain drain, which signals the need for extensive capacity-building interventions. Also, they have a high score (low performance) of public services provision.

Operating in FCV conditions is very challenging. The difficulty stems from the need to constantly adapt to fluid contexts with varying degrees of insecurity, political and economic instability, and reduced institutional capacity. To understand the extent of these elements, and their second-order effects, FCS would need to be defined according to a fragility spectrum. Following the methodology presented in the World Bank's FCV strategy, the countries examined

2 The Middle East's global share of conflicts increased from 11 percent in 2010 to 24 percent in 2016 (United Nations and World Bank 2018), and the trend is expected to continue (US National Intelligence Council 2017).
3 The index is developed and supported by the Fund for Peace. For more background of the methodology followed refer to https://fragilestatesindex.org/methodology/.
4 There is no FSI data available on the West Bank and Gaza

**Table 2.3**

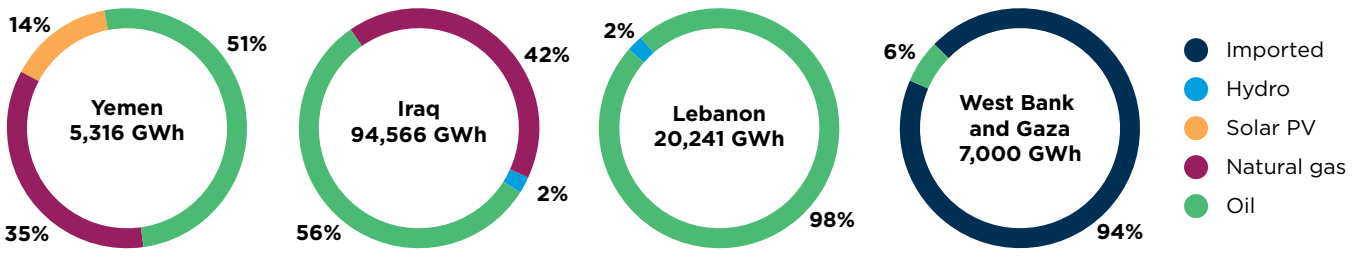
## Classification and Indicators of FCS in Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza

| Country | Fragility and conflict classification | Leading indicator(s) | Type of engagement |
|---|---|---|---|
| Iraq | Medium-intensity conflict | An absolute number of conflict deaths, and number of conflict deaths relative to the population between 2 and 10 per 100,000, or<br>Rapid deterioration of the security situation, as measured by (a) a lower number of conflict deaths relative to the population, and more than a doubling of the number of casualties in the last year.<br>Data source: UCDP 2020; ACLED 2018. | Preventing conflict<br>Exiting conflict<br>Facing externalities in the form of forced displacement |
| Lebanon | High levels of social and institutional fragility<br>Exposed to spillover effects | The presence of a UN peacekeeping operation<br>The presence of a large influx of refugees<br>Data source: United Nations Peacekeeping, 2020; UNHCR 2020. | Preventing conflict<br>Facing externalities in the form of forced displacement |
| Republic of Yemen | High intensity conflict<br>High levels of social and institutional fragility | An absolute number of conflict deaths, and<br>Number of conflict deaths relative to the population above 10 per 100,000<br>Revised harmonized Country Policy and Institutional Assessment score that is below 3.0<br>Data source: UCDP 2020; ACLED 2018; World Bank 2020a. | Dealing with an active conflict<br>Preventing conflict<br>Facing externalities in the form of forced displacement |
| West Bank and Gaza | High institutional and social fragility | The presence of a UN peacekeeping operation<br>Data source: United Nations Peacekeeping 2020. | Dealing with an active conflict<br>Preventing conflict |

*Source:* Methodology based on World Bank 2020d.

**Figure 2.2**

## Electricity by Source of Generation




*Source:* IEA 2020.
Note: GWh = gigawatt hour.

in this report can be positioned on the adopted fragility spectrum and classified based on relevant indicators. Table 2.3 lists the used classification, their leading indicators, and data sources. Republic of Yemen, as expected, is the only country that lies in the "high-intensity conflict" classification. Iraq is in the "medium-intensity conflict," while Lebanon and the West Bank and Gaza have "high levels of social and institutional fragility," with Lebanon also exposed to spillover effects due to it hosting many refugees. The estimated number of Syrian refugees in Lebanon is around 1.5 million, added to more than 200,000 Palestinian refugees, making Lebanon the country hosting the highest number of refugees per capita (UNHCR 2020).

The classification adopted in table 2.3 can be utilized to help with identifying priorities, entry points, and types of engagement. One can safely assume that most countries in MENA need a conflict-preventive approach. As such, the four concerned economies studied require conflict-preventive operations and interventions. The focus of these efforts should be on tackling risks and promoting social and economic resilience, including strengthening the resilience of energy systems. For countries like Republic of Yemen, where an active conflict is taking place, focus should be on delivering essential services such as health, education, and energy to critical facilities, such as hospitals. As for countries that are at risk of undergoing phases of forced displacement, efforts should prioritize mitigating effects and shocks, particularly those resulting from climate and environmental challenges.

## THE ENERGY LANDSCAPE

First, it is important to highlight that throughout this report, energy refers mostly to electricity generation. Although the energy space does extend beyond power generation, the focus on electricity is due to its paramount role, as a basic service, in regaining peace and boosting economic recovery after conflict (Whaites 2008). Additionally, since conflict-affected countries suffer from lack of proper and reliable energy access, the provision of electricity will likely be seen as an indicator of returning to normality (Ahmad, Chite, and Saghir 2019).

Figure 3.2.2 shows the energy mix in Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza. Across the board, there is a high dependency on fossil fuel–fired thermal power generation, particularly in Iraq and Lebanon, where 57 and 98 percent of electricity, respectively, is generated by oil or an oil derivative, such as heavy fuel oil or diesel. In Republic of Yemen, the share of renewable energy's contribution to the energy mix is at 36 percent because of the wide adoption of distributed solar photovoltaic systems in recent years (Al-Akwaa 2019). The West Bank and Gaza suffer from a different kind of dependency as, combined, they import around 94 percent of their electricity from neighboring countries, mostly from Israel. The impact of such high dependency on oil on the economies in the region in general cannot be overstated. In Lebanon, 40 percent of postwar public debt (about US$36 billion) between 1992 and 2018 resulted from the deficit in the country's power utility, Électricité du Liban (EDL) (McDowall 2019).

**Table 2.4**

## Power Outages and Average Electricity Tariffs

| | Power outages in urban areas (hours per day) | Electricity Cost (cents per kWh) | References |
|---|---|---|---|
| Yemen, Rep. | 8–12 | 8 | Huenteler et al. 2017 |
| Iraq | 4–22 | 5 | Ibrahim 2018; World Bank 2019a |
| Lebanon | 3–12 | 9 | Authors' data |
| West Bank and Gaza | 16–20 (Gaza only) | 10 (imported)<br>15 (self-generation) | Badiei et al. 2017 |

*Note:* kWh = kilowatt hour.

In terms of access to electricity, except for Republic of Yemen, which has population groups that are geographically dispersed and hard to reach, FCS in MENA have relatively high electrification rates. In Iraq, Lebanon, and the West Bank and Gaza, more than 90 percent of the public has access to electricity, while it is considerably lower in Republic of Yemen, especially in the rural parts of the country (Huenteler et al. 2017). However, as shown in Country-Specific Methodology Details, disruptions in service delivery and poor power quality are prevalent in all countries, and power outages are very common. The frequency and length of these power outages vary depending on geography (cities are often better supplied with power than rural regions), season, and, in the case of countries with an active armed conflict, on the level of damage done to the energy infrastructure.[5]

As a stopgap solution to power outages, distributed power generation has increasingly become prevalent, with high reliance on back-up diesel generators because of their relatively low capital costs. However, the operation of diesel generators come at high financial, environmental, and public health costs (IFC 2019).

5 According to the World Bank's Doing Business report, all the MENA FCV countries have a score of "0" on their "total duration and frequency of outages per customer a year" index, except for the West Bank, which scores "1," as it is connected to the Israeli power grid. This index consists of two indicators: the "system average interruption duration index" and the "system average interruption frequency index" (World Bank 2020b).

Chapter 3

# Connecting the Dots: Identifying the Gender-Fragility-Energy Nexus

## OVERVIEW OF THE GENDER-FRAGILITY-ENERGY NEXUS

Wars can be understood as "development in reverse": not only can they freeze or diminish economic growth and induce substantial human capital losses, they can also entrench gender inequalities (World Bank 2011). Drawing from regional and global experiences, it seems that conflicts and fragility exacerbate gender disparities. Armed conflicts affect both women and men, but in different ways. While men are more likely to be killed or injured as a direct result of conflicts, indirect consequences of conflicts, such as deterioration of public services in health, education, and energy, have been found to affect women more than men (Plümper and Neumayer 2006). Moreover, it is estimated that about 80 percent of displaced persons are women and girls, who are vulnerable to security and health concerns as well as to scarcity of service provision, such as access to safe water and basic energy (UNFPA 2007). Additionally, armed conflicts and political instability have been shown to exacerbate gender inequalities due to weakened institutions and prevailing regressive gender norms and practices (OCHA 2019). Figure 3.1 shows the main interactions of the gender-energy-fragility nexus.

On the other hand, women's economic empowerment in fragility, conflict, and violence (FCV) contexts is correlated with more lasting peace: for example, studies have shown that when women take on leadership roles and participate in peace negotiations, agreements last longer and more widely-accepted (United Nations and World Bank 2018). On the flip side, countries with high levels of social and gender inequities tend to be more vulnerable to war than countries that support gender equality.

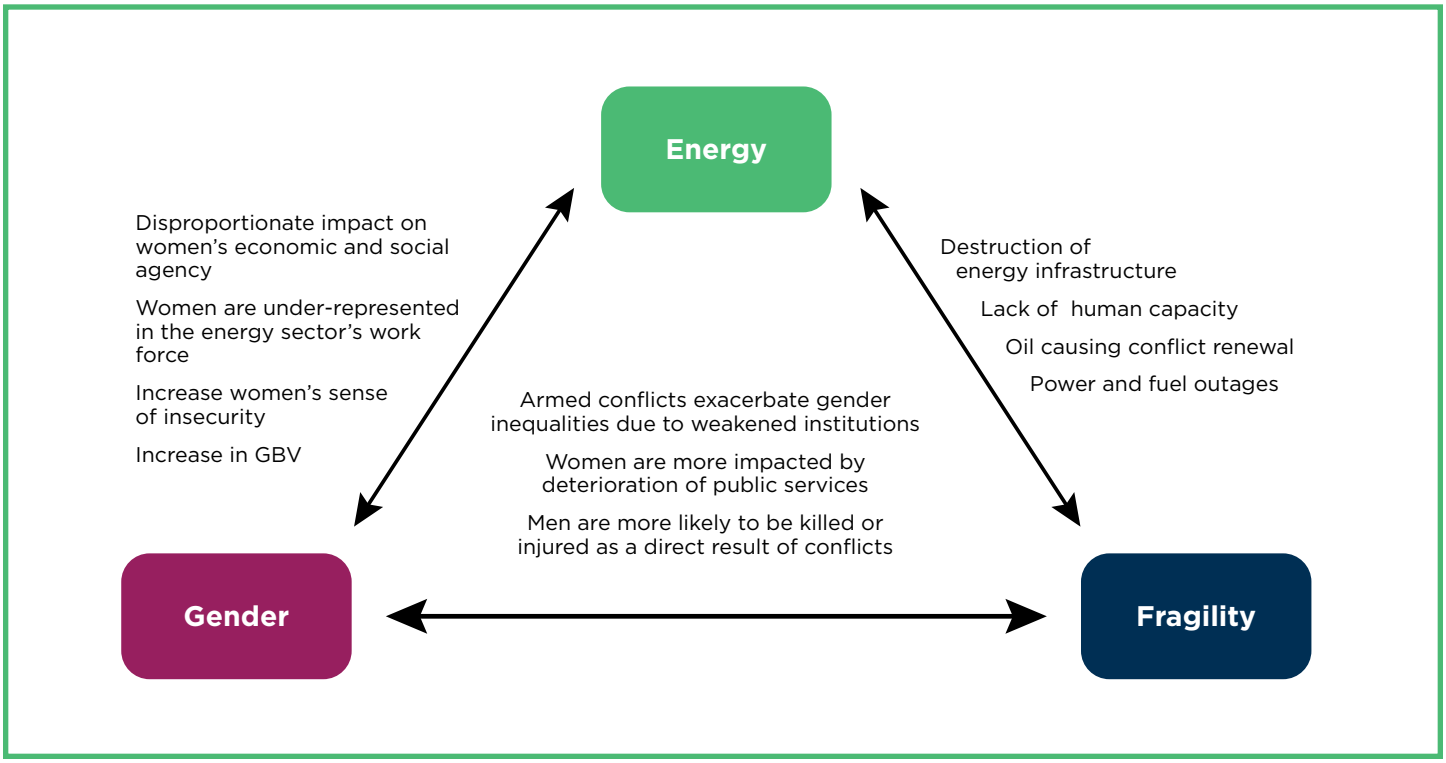
So how does energy fare in the well-established gender-fragility connection? First, it should be noted that the studied literature acknowledges the impact of improved access to energy (mainly through electrification interventions) on the welfare of women as well as men, but highlights many important specific impacts on women's empowerment, particularly on the issues of productive use of time and market participation (Clancy et al. 2012; Winther et al. 2017). Additionally, improved energy access facilitates women's access to information services such as television and/or the internet, which in turn could enhance women's voice and agency (UNDP 2013). A review of donor support in four countries—Bangladesh, the Democratic Republic of the Congo, Ethiopia, and Nepal conducted by the Organisation for Economic Co-operation and Development concluded that some of the factors contributing to gender inequality in FCV contexts that are directly or indirectly linked to energy provision are the lack of access to basic services, GBV, and women's exclusion from economic decision-making (OECD 2017).

By virtue of being strategic targets, energy infrastructure such as power generation units or transmission lines, is often exposed to heavy damage during conflicts, which subsequently reduces energy and electricity supplies drastically (Ahmad, Chite, and Saghir 2019).

Energy, in its broader definition that extends beyond power generation to natural resources and their security of supply, does contribute to the instigation of wars and conflicts. While discussing the mechanisms through which energy (mostly oil) impacts international peace and security is beyond the scope of this report, there is a vast body of literature that reflects on such a relationship

**Figure 3.1**

**Main Interactions of the Gender-Energy-Fragility Nexus**




(Colgan and Stockbruegger 2018; Månsson 2014). As Ahmad et al. noted, in the context of conflict states in the Middle East and North Africa (MENA), the availability of oil and gas resources could have a detrimental and destabilizing impact, which could trigger conflict renewal (Ahmad, Chite, and Saghir 2019). In Iraq, following the deterioration of the so-called Islamic State, the Iraqi central government in Baghdad clashed with the Kurdish Peshmerga over control of the oil-rich city of Kirkuk (Chmaytelli and Jalabi 2017).

## FRAMEWORK OF GENDER-RELATED INEQUALITIES AND VULNERABILITIES

The interactions among the three nexus components—gender, energy, and fragility—can be examined under different frameworks, such as social versus economic, or displaced versus nondisplaced, and so forth. In this report, we opted for a framework that categorizes the gender-related inequalities and vulnerabilities into three domains: household, community, and markets. The choice of this framework was based on its well-defined boundaries and inclusivity of various gender interactions. Clearly, it would be difficult to group all the known gender-energy-fragility nexus interactions under one framework. However, for the scope and data presented in this report, the proposed framework provides a useful typology of the identified issues, which are listed in table 3.1.

On the *household level*, the chronic lack of service provision of electricity in fragile and conflict contexts disproportionately affects women. First, since women are typically tasked with energy- and time-consuming household chores, such as cooking, washing, and cleaning, they are expected to carry the burden of finding alternative energy sources, such as fetching firewood in areas that are unsafe, unprotected, or part of an active military conflict.[6] Collecting firewood could also force girls, who often provide help to their mothers, to drop out of school and could subsequently lead to early marriage. It has also been

6 In some cases, it has been reported that many women rely on firewood collection as an economic activity, generating income through the sale of collected firewood. In such cases, the supplying of alternative fuel sources, such as solar cookers, should be accompanied by economic empowerment opportunities, which would allow women to compensate for any possible loss of income (Women's Refugee Commission 2006).

**Table 3.1**

## Known Gender and Energy Interactions in FCV States in MENA and Beyond

| Domain | Examples of known interactions | Sources |
|---|---|---|
| Household | • Women and girls are typically tasked with energy- and time-consuming household chores<br>• There is gender disparity in decision-making power regarding whether to connect to the grid and whether to choose certain energy sources or electric appliances.<br>• Women, who are typically managers of the household, are not properly informed about the utility of energy efficiency. | UNHCR 2018a<br>Kamel Nabli and Chamlou 2004<br>Canpolat and Maier 2019; Karlsson 2015 |
| Community | • Women and girls are disproportionately affected by lack of energy access, which can result in them dropping out of school and/or missing out on economic empowerment opportunities.<br>• Lack of street lighting at night increases women's perception of insecurity.<br>• Women refugees are especially vulnerable to physical threats due to the lack of energy access.<br>• Postconflict reconstruction of infrastructure, including energy generation, transmission, and distribution projects, can induce negative impacts that disproportionately affect women.b | UNDESA 2014; Canpolat and Maier 2019<br>UNHCR 2018a<br>Women's Refugee Commission 2006<br>Orlando et al. 2018 |
| Markets | • Renewable energy can be leveraged to promote women's entrepreneurship.<br>• The energy sector is male dominated, and even in the renewable energy sector, which performs slightly better than other sectors such as oil and gas, women's participation remains low.<br>• Women's access to finances tends to be lower than men's. | Dehghan 2019<br>Ahmad et al. 2019<br>Isaac 2014 |

*a.* In Haiti, a study on the impact of lack of lighting in displaced people following the 2010 earthquake showed that inconsistent access to electricity was one of the important factors contributing to women and girls feeling unsafe (IRC 2014).
b. Large infrastructure projects may also involve land acquisition and resettlement, which may involve inequitable compensation—to which women may be particularly vulnerable—or negative impacts due to the loss of land-based income-generation activities, such as agriculture. The issue of social norms affecting women's property rights is often exacerbated by a lack of awareness among women about land and business registration processes, which can adversely affect their ability to obtain fair compensation (Cernea 2000).

reported that lack of electricity to charge phones and power radios isolates women from important sources of information on health, rights, and safety as well as limiting their access to potentially supportive social and economic networks (World Bank 2017).

On the *community level*, studies have shown that lack of electricity provision contributes to women's increased sense of insecurity and is a precursor to violence, in general, and consequently to gender-based violence (GBV), particularly in conflict-affected states (UNFPA 2017; UNHCR 2018a). Women are generally more exposed to GBV but men, too, are affected, albeit to a lesser degree (World Bank 2018b). An example of this is the reported amplification of violence in Gaza during 2008–09, which required additional assistance for women who faced domestic and public violence. A United Nations study shows that electricity shortages have intensified uncertainty among women, with up to 61 percent of women surveyed reporting the belief that, as a result of the shortages, more women are now exposed to GBV (UNFPA 2017).[7] In May 2017, the United Nations warned that the energy crisis in Gaza was severely affecting water supplies and health services and could trigger an outbreak of violence (Ariel 2017).

The link between energy and GBV is multifaceted. First, since energy access naturally facilitates women's access to information, connectivity, and counseling services, women in electrified households are more likely to be informed about their rights and report domestic violence against them. Second, energy access empowers small and informal businesses owned and run by women, which could help them break social norms and gain bargaining power at home, reducing their chances of being exposed to domestic violence. Third, large infrastructure projects are often characterized by the presence of an influx of male migrant workers, who could contribute to an increased sense of insecurity by local women and girls.

The lack of energy services provision does not impact only the activities that are directly linked to energy consumption or supply, which constitute only one facet of potential gender inequalities. Fragile and conflict-affected countries demonstrate an expanded level of gender disparity in multiple domains (UNDP 2016)—this is also demonstrated in the interactions listed in table 3.1.

On the *markets level*, well-designed and -implemented energy interventions are important because of their potential to empower women economically. Improved energy access can not only free women's time to pursue education or income-generating activities, it can also help to promote local and informal businesses run by women, thus utilizing women as agents for economic growth. Another gender-related aspect of energy interventions is the gender imbalance in employment within the energy sector itself, across the different elements of the energy value chain. Globally, women are underrepresented in the energy sector's work force, and the MENA countries present no exception. In this regard, postconflict energy operations and interventions can be an effective platform to establish new and equitable gender norms and expectations as well as to train and employ more women in the energy sector.[8]

Figure 3.2 visualizes the gender and fragility domains and their relevant energy interventions. These domains are identified based on the above described framework and discussion of the gender-fragility-energy nexus. Further information on the World Bank–led energy interventions in MENA are discussed in chapter 6.

## INTERACTIONS BETWEEN GENDER AND ENERGY REFORMS

As the surveyed literature concluded, there is a window of opportunity to push for reforms immediately after a conflict has ended (Ahmad, Chite, and Saghir 2019). In Lebanon, for example, many of the energy sector's shortcomings today are a direct result of the lack of reforms that should have been implemented soon after the civil war ended in 1992. One direct result of this lack of action is the spread of the largely unregulated informal power sector (diesel generators).[9]

Energy sector reforms in this postconflict context can have a substantial impact on women's livelihoods and economic empowerment on the three identified domains: household, community, and markets.[10] This mainly stems from the

7 Palestinian Central Bureau of Statistics figures point to high rates of intimate partner violence with stark regional disparity between the two Palestinian territories: 29.9 and 51.1 percent of women in West Bank and Gaza, respectively, were exposed to some form of intimate partner violence between 2010 and 2011 (PCBS 2012). Different forms of intimate partner violence surveyed include economic, social, psychological, sexual, and physical. In this case, the intimate partner referred to by the survey is "husband."

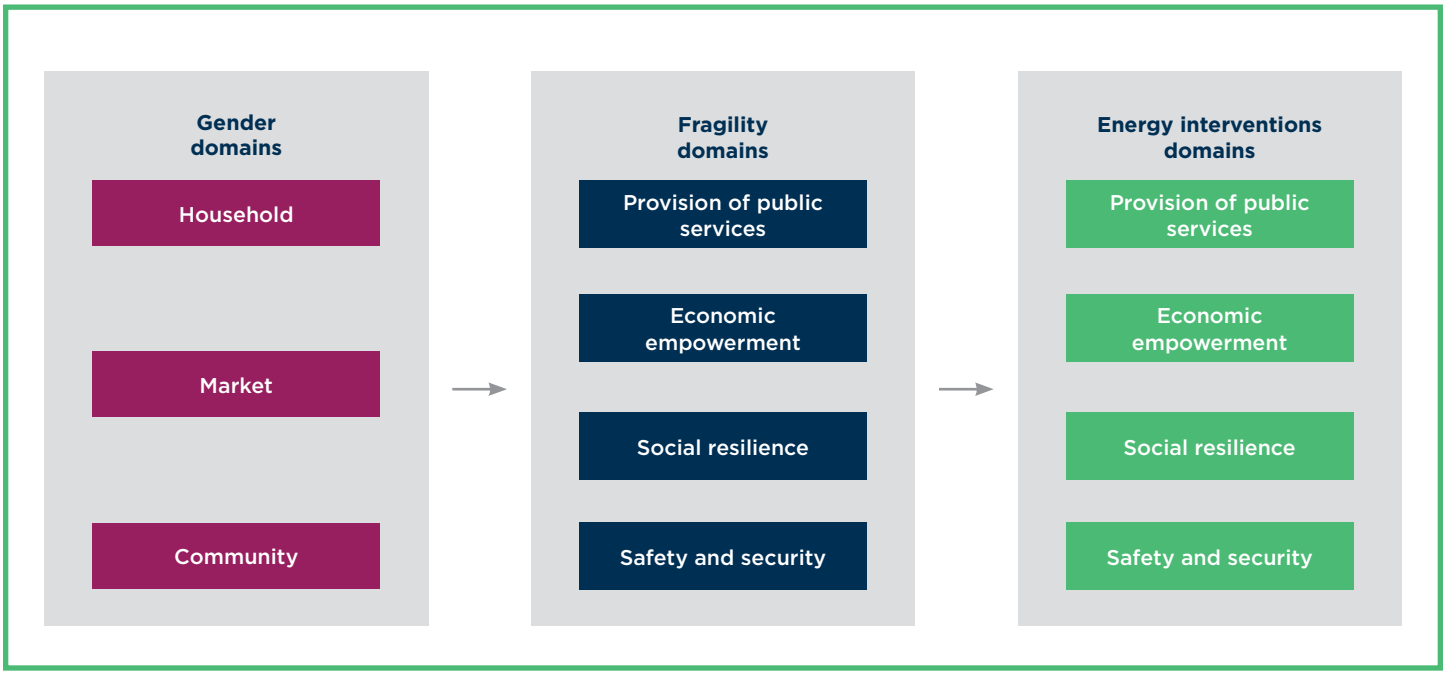
8 For example, the conflict in Syria has been reported to have shifted the role of women in the country's economy and public life to a more empowered status (Hilton 2017).

9 In 2018, private diesel generators in Lebanon provide about 40 percent of electricity to Lebanese consumers at prices that can be triple that sold by Électricité du Liban (EDL), the national electricity utility.

10 There is an extensive body of literature examining the gender dimension of energy reforms that is mainly focused on low- and middle-income countries (Skutsch 2005).

**Figure 3.2**

## Identified Gender, Fragility, and Energy Interventions Domains




pronounced differences between men and women in terms of energy needs and priorities, the roles they assume in society and households, and the gap between them with regard to income and economic empowerment.

In Lebanon, the World Bank Group's energy sector engagement is focused on helping the country implement the necessary reform program, which incorporates several components that aim to increase generation capacity, reduce technical and nontechnical distribution network losses, and implement tariff adjustments. The rehabilitation of damaged energy infrastructure and increase of power generation capacity is an essential postconflict measure to drive economic recovery. These physical measures should be complemented by adopting a reform program at the policy level. Drawing from global experiences of reform interventions, each of these components has a gender component that varies between countries and region.

Table 3.2 summarizes the potential gender-relevant effects of the proposed reform components in Lebanon. The long-proposed tariff adjustment has been one of the most needed and most resisted reform components.[11] However, given the large disparity between average male and female income,[12] and the fact that female-headed households consume more energy per capita,[13] this measure is likely to have a gender-differentiated impact on energy affordability. Since women spend on average a higher share of their income on electricity consumption, tariff increases may lead to the loss of income that otherwise could be used for other essential expenditures such as food, clothing, and education. Additionally, as women are typically responsible for household chores, tariff adjustment is also likely to impact them by influencing their energy use patterns. For example, women may opt to do certain tasks manually to save energy or shift their work schedules to coincide with generator electricity. In both cases, there may be an element of inconvenience and time cost.

On the other hand, the inclusion of renewable energy sources in Lebanon's energy mix carries multiple gender-relevant benefits. First, utility-scale renewable energy

11 Postconflict Lebanon was unable to reform its electricity tariff structure, which heavily subsidizes all customers, large and small, and therefore penalizes small consumers with very large fixed charges. The electricity tariff has not changed since 1996, when the oil price averaged US$21 per barrel, missing several opportunities for reform and widening EDL's fiscal deficit, especially when oil prices were high.

12 According to the 2020 Global Gender Gap Report, the female-to-male wage equality ratio for similar work is 0.61 (World Economic Forum 2019).

13 According to 2011 World Bank data, in per capita terms, female-headed households spend more on electricity and consume more electricity as well, due to lower household size (Atamanov and Jellema 2019).

**Table 3.2**

**Gender-Relevant Effects of the Proposed Reform Components in Lebanon**

| Reform component | Gender-relevant effects |
|---|---|
| Tariff adjustment | • Loss of income and affordability<br>• Change of energy use patterns |
| Promotion of renewable energy | • Increased direct and indirect employment opportunities, particularly in rural regions<br>• Increased energy coverage |
| Corporatization or privatization of power utilities | • Potentially lower commitment to low-income consumers<br>• Mixed impact on female participation in EDL's operations and management |

projects would be commissioned in inland rural regions, which are less developed compared to Lebanon's coastal cities. These regions have lengthier power cuts and consequently, due to their higher levels of consumption and lower income, women in these regions pay more for expensive diesel generators. Therefore, the deployment of renewable energy is likely to provide low-income households, especially female-headed ones, with access to cheaper electricity. At the same time, the development of such infrastructure projects could lead to substantial direct and indirect job opportunities that women could benefit from. Many women in these regions are unemployed because of mobility and safety challenges, and providing such job opportunities at their doorsteps could be an important impetus toward their economic empowerment. Additionally, implementing such projects in rural Lebanon would bring opportunities to establish training centers and universities that could also cater to the population residing in those regions, particularly women.

## FACING THE CHALLENGES OF REFUGEES AND DISPLACEMENT

As the Syrian refugee crisis has become prolonged, and with no immediate prospects for an end, development and infrastructure issues have become more critical in the response efforts. Energy is among the most pressing concerns to be addressed, both to provide for the basic needs of refugees and to help host countries improve their power infrastructure and reach clean energy goals.

Global humanitarian and development actors have increasingly recognized this reality. At the Global Refugee Forum held in Geneva in December 2019, for instance, the UN High Commissioner for Refugees issued a clean energy challenge, calling for all refugee settlements and nearby host communities to have access to "affordable, reliable, sustainable, and modern energy by 2030" (UNHCR 2019). This would include renewable energy usage to power health and education facilities, street lighting, and other public facilities, as well as use of clean and modern cooking fuel.

In Lebanon, the need to address energy as part of the Syrian refugee response is particularly urgent. The country's power sector was already weak and unable to fully meet demand before the refugee crisis. The Syrian refugees—of whom there are more than 900,000 registered and potentially hundreds of thousands more unregistered—have placed added pressure on the demand for basic services, including energy. The arrival of the Syrian refugees required an added power generation capacity of 486 megawatts compared to 2010 levels (UNDP 2017).

While the refugee crisis has placed Lebanon's energy system under additional strain, the cost of energy also places a strain on the refugees. Syrian refugees in Lebanon who are staying in rented housing pay an average of US$46 per month on electricity, while those living in settlements pay US$27. Additionally, nearly 60 percent of Syrian refugees spend US$16–50 per month on diesel generator subscriptions. Those unable to afford generator subscriptions go without power for at least three hours every day (Lighting Global

**Box 3.1**

### Distributed Solar Power Solutions for Refugees

Distributed solar power can play a major role in improving refugees' access to energy. There have already been some successful efforts in this regard. In Jordan, for instance, the Azraq refugee camp became the world's first refugee camp powered by renewable energy, with a 2-megawatt solar photovoltaic plant providing sustainable energy to more than 20,000 refugees. Also, in Jordan, Germany paid to build a 12.9-megawatt peak solar photovoltaic plant in the Zaatari camp, providing not only energy access but jobs for the residents, while excess energy produced by the plant helps to power nearby host communities. The UN High Commissioner for Refugees is currently partnering with IKEA to provide access to renewable energy to some 60,000 refugees in Jordan and Rwanda.

Lebanon presents a different situation, as there are no formal, centralized refugees camps. Rather, thousands of informal settlements are scattered throughout the country. However, there are still opportunities for development of distributed solar power in refugee settlements. A survey of refugees in Lebanon by the World Bank's Lighting Global platform found that many were interested in—and willing to pay for—solar energy systems to replace or supplement their reliance on generators. Syrians living in informal settlements expressed the most interest, with 51 percent being willing to pay for some form of solar power product (Lighting Global 2019).

Cost, lack of knowledge, and lack of access to solar products and financing may present barriers to implementation. However, there is significant potential for solar minigrids to replace or supplement the use of local diesel generators for many refugee settlements and surrounding communities in Lebanon.

2019). As Syrians have on average significantly lower monthly earnings than their Lebanese counterparts, this represents a substantial portion of their monthly income. Compared to Lebanese citizens, who spend 9 percent of their income on electricity on average, Syrian refugees in rented housing pay 18 percent and those living in settlements pay 23 percent (Lighting Global 2019). This expense may cut into refugees' ability to purchase other basic goods, such as clothing and school supplies.

Female-headed households are particularly impacted. According to the 2019 vulnerability assessment of Syrian refugees in Lebanon, 18 percent of households are female headed (UNHCR 2019). Female-headed households are more likely to live in informal settlements than are male-headed households: 29 percent of female-headed households versus 18 percent of male-headed households were living in nonpermanent structures and are less likely to live in residential buildings (60 versus 71 percent). Clearly, this creates a disparity in energy access, as formal and residential settings are better served with electricity supplied by the state utility, EDL, but also by diesel generators, which are prevalent in Lebanon's residential sector.

Meanwhile, female-headed refugee households have a lower average income and are more likely to fall under the poverty line than male-headed households. A 2019 vulnerability assessment found that female-headed Syrian refugee households had an average income of US$47 a week, compared to US$69 for male-headed households. Women, therefore, are likely to find the cost of electricity to be more of a burden (UNHCR 2019).

With talks of an impending electricity tariff increase in Lebanon to address the substantial annual losses of EDL, the situation for those female-headed households may worsen, unless they are included in social safety net programs.

Refugee women's access to basic services, such as electricity, may also be impeded by not having proper documentation, which in some areas is needed to formalize renting an apartment. Cultural norms and fears of sexual harassment and assault also, in many cases, prevent Syrian women from moving as freely as men. Lack of energy for street lighting can exacerbate those fears.

Improving energy access in refugee settlements can serve as a protection measure against GBV. Refugee response efforts in the Horn of Africa, for instance, have aimed to reduce the distances women and girls must travel in search of fuel wood and water, in effort to decrease their exposure to sexual assault and harassment. Efforts have also focused on installing solar lighting in settlements to reduce crime and GBV (see box 3.1) (World Bank 2019b).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Chapter 4

# Methodology

A mixed-method approach was used to build evidence for this study, leveraging focus groups, interviews, and online surveys. Primarily, the insights and data collected on the Middle East and North Africa (MENA) region resulted from a portfolio review of energy operations and interventions that are either active or in the pipeline and their corresponding analytical products and progress reports. The portfolio review benefited from the new "gender tag," a mechanism to ensure that the World Bank Group's (WBG's) operations are gender informed and aligned with the institutional strategy of narrowing gender gaps, which was introduced in 2017. The function of the gender tag is to identify the relevant gender gaps between women and men, provide project-specific actions to address these gaps, and track progress toward reducing the identified gap through the use of indicators (World Bank 2018a).

The distribution of the methodology tools is shown in table 4.1. In addition to these data collection mechanisms, the study relied on an extensive desk-based portfolio review to understand the characteristics of the energy-gender nexus in conflict-affected contexts in the MENA region. In all of the data collection instruments shown in Table 4.14.1, demographic diversity has been considered, except in certain cases where a specific group or population was targeted—see table 4.2.

One of the major challenges in conducting this study has been the lack of readily available, up-to-date, and high-quality data. Across the MENA region, lack of data that could be utilized to inform public policies is prevalent.[14] It should be noted that this is also a challenge in fragility, conflict, and violence (FCV) contexts in other regions. Where data exist, it is either not publicly accessible or leveraged. This issue becomes more pronounced in FCV countries, which suffer from the lack of appropriate data infrastructure and, due to security concerns, the needed local capacity to conduct survey work on the ground. It should be noted that, although the various methods utilized in this study (interviews, surveys, and focus group discussions) have aimed at generating reliable data and insights, they remain largely contextual.

*In Iraq*, the purpose of the study was to explore impacts of improvements in electricity service quality and reliability on (i) women's ability to engage in economic activities; (ii) income levels of women engaged in economic activities, including women-owned businesses; (iii) female students' ability to engage in educational activities; (iv) women's health outcomes; and (v) women's sense of security and safety. Data collection relied on a series of focus groups discussions (FGDs) and interviews. The FGDs were conducted with (a) women who are economically inactive, (b) women receiving social assistance, (c) women receiving vocational training, (d) working women (public and private sector), and (e) university students. As for the interviews, they were split between individuals and representatives of nongovernmental organizations (NGOs). The interviews with NGO representatives aimed to measure their scope of work and obtain additional information on the impact of unreliable electricity on women. In terms of geographical coverage, the FGDs and interviews took place in central Basra (urban area) and in Abu Al Khaseeb (agricultural area), except the FGD that involved university students, which was conducted only in central Basra.

*In Lebanon*, the focus of the produced analysis was on assessing female students' participation across science, technology, engineering, and mathematics fields as well as the challenges women face in general when they enter and

14 According to the Open Data Barometer "almost all countries in the MENA region are backsliding on open data" (ODB 2019).

**Table 4.1**

## Methodology Tools Implemented to Generate Evidence for This Study

| | Iraq | Lebanon | Yemen | West Bank and Gaza |
|---|---|---|---|---|
| Portfolio review | ● | ● | ● | ● |
| Focus groups | ● | ● | ● | |
| Interviews | ● | | ● | |
| Online surveys | | ● | | ● |

*Note:* Scope of operations and portfolio review refer to those led by WBG's projects.

**Table 4.2**

## Country-Specific Methodology Details

| Country | Methodology | Number | Sample size |
|---|---|---|---|
| Iraq | Focus groups | 2 | 24 |
| | Interviews | 22 (10 with women; 12 with NGOs) | NA |
| Lebanon | Focus groups | 1 | 25 |
| | Online surveys | 15 (companies) | NA |
| Yemen, Rep. | Focus groups | 13 | 109 (50 women) |
| | Interviews | 42 (19 women) | NA |
| West Bank and Gaza | Online surveys | 125 (companies) | NA |

progress through the energy sector. The work utilized desk review, which aimed at mapping existing energy education programs and energy institutions; as well as a targeted FGD and online surveys to identify the knowledge gaps in understanding the employment and gender landscape of the energy sector in Lebanon. Specifically, the FGD aimed to (i) identify entry and retention barriers for women in the energy sector in Lebanon and their degree of significance, (ii) propose measures to enable women's empowerment in Lebanon's energy sector on the national, subnational, and institutional levels, and (iii) examine how men and women are affected by energy reforms.

*In Republic of Yemen,* the scope of the study was to understand the community needs and preferences for home solar systems in peri-urban and rural communities. The implemented methodology consisted of desk review, consultations with a partnering organization (United Nations Office for Project Services), and field data collection that leveraged focus group discussions and individual interviews. The collected data aimed at providing insights on (i) constraints and challenges to energy access; (ii) coping mechanism due to lack of reliable access to electricity; (iii) impacts on time, education, health, and safety; (iv) norms, preferences, and expectations; and (v) affordability and the role of microfinancing.

*In West Bank and Gaza*, the main effort of data collection on the intersection between energy and gender has been to draw from existing data, including the Local Governance Performance Assessment survey conducted by the WBG. The survey included a wide set of indicators to help with understanding the gender gap based on head of household with regard to energy access, types (and sources) of energy used, as well as citizen perceptions and access to information.[15]

15 Two additional surveys were initiated, which are ongoing. The first aims to assess women's participation in the energy sector in the West Bank and Gaza; the second examines the lack of energy provision on businesses.


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Chapter 5

# Interventions and Field Work Results

## OVERVIEW OF THE WBG'S ENERGY INTERVENTIONS IN MENA'S FCV SITUATIONS

Currently, the World Bank Group (WBG) is engaged with electricity sector operations and interventions in four FCS economies in the Middle East and North Africa (MENA region: Iraq, Lebanon, Republic of Yemen, and the West Bank and Gaza. Although this report is focused on those four, the lessons learned and recommendations, the foundations of which are presented in this chapter and which are presented in summary in the chapter 6, may well be transferable to other countries or situations with similar contexts within the region and elsewhere. Since each of the considered countries has a different profile of energy needs and level of destruction to its energy infrastructure, the existing (active) and pipeline operations vary in terms of scope and committed resources.

In Republic of Yemen,[16] the focus of the WBG interventions—implemented by United Nations Office for Project Services[17]—is on improving energy access, especially in peri-urban and rural areas, and on utilizing renewable energy solutions such as solar photovoltaic (PV) systems to respond to the chronic lack of access electricity.

In the West Bank and Gaza,[18] the focus of the existing operations is on promoting energy security through improving the reliability of electricity, with a focus on operational performance through institution building and the launching of a pilot for solar energy in Gaza.

In Iraq,[19] electricity supply is also an issue, and current operations target infrastructure and management improvements to enhance the reliability of the power network as well as the provision of energy support to small and medium-size entrepreneurial enterprises.

In Lebanon,[20] there are several operations in the pipeline: gas-to-power, transmission, as well as supporting energy reforms and strengthening the power sector's governance and promote its efficiency.

The WBG's operations highlighted here have identified a range of entry points for tackling specific gender-based gaps in the sector. These gender-based gaps refer to issues related to the sector that affect women or men in ways that would disadvantage them because of their gender. Actions to close these gaps have then been incorporated into the design of the program along with corresponding indicators to measure progress associated with closing these gaps. By looking at these indicators, one can clearly see a focus on

16 Project P163777 (active): Yemen Emergency Electricity Access Project. See https://projects.worldbank.org/en/projects-operations/project-detail/P163777.

17 The WBG relies on UN agencies as implementing agencies in Yemen on an exceptional basis under the Financial Management Framework Agreement between the World Bank and the UN.

18 Project P170928 (active): Advancing Sustainability in Performance, Infrastructure, and Reliability of the Energy Sector in the West Bank and Gaza. See http://documents.worldbank.org/curated/en/741811582670477398/Project-Information-Document-Advancing-Sustainability-in-Performance-Infrastructure-and-Reliability-of-the-Energy-Sector-in-the-West-Bank-and-Gaza-P170928; and Project 167914 (active): Electricity Sector Performance Improvement Project for West Bank and Gaza. See https://projects.worldbank.org/en/projects-operations/project-detail/P167914.

19 Project P162454 (active): Electricity Services Reconstruction and Enhancement. See https://projects.worldbank.org/en/projects-operations/project-detail/P162454.

20 Project P170769 (concept stage). Lebanon Electricity Transmission Project. See http://documents.worldbank.org/curated/en/235831562864951356/text/Concept-Project-Information-Document-PID-Lebanon-Electricity-Transmission-Project-P170769.txt.\

**Box 5.1**

### WBG's Energy and Gender Strategy in MENA

The WBG's *MENA Regional Strategy* focuses on economic inclusion, strengthening the social contract, including jobs and gender equity, as well as promoting resilience to refugees and internally displaced people. On Energy, the *Energy and Extractives Global Practice Gender Follow-up Note* emphasizes the following elements:

Expanding the engagement of women in the energy value chain through direct employment under World Bank operations in communities close to World Bank project areas and by providing training and capacity building to allow women entrepreneurs to engage in commercial activities

Engaging women in project-related decision-making processes—these consultative processes need to go beyond the traditional social safeguard consultations and need to be integrated with citizen engagement processes and conducted by knowledgeable locals with sensitivity to social norms

Targeting the provision of access to specific underserved populations, such as refugees—MENA has a high overall rate of access, but there are hard-to-reach groups and displaced people who need to be provided with basic access

Mitigating gender-based violence (GBV) by providing improved public street lighting and through awareness raising activities on GBV for both men and women

Supporting analysis on the gender-related impacts of subsidy reform and supporting policy dialogue.

monitoring women's economic empowerment in the existing interventions. Issues such as time poverty, health, and safety, and GBV are less tracked, not because they are less important, but because of the challenges with monitoring the impact on time poverty, health, and safety data—in terms of resources required to demonstrate correlation. It is also challenging overall to collect data on GBV due to sensitivities and strict ethics around the work it entails. Furthermore, the WBG gender strategy and MENA regional strategy place a strong emphasis on more and better jobs, especially for women and youth. Therefore, while the former issues may not be addressed as persistently, they are accounted for when data are available and included in the conception of these interventions.

Besides the explicit gender considerations and indicators listed in table 5.1, the WBG's energy interventions in MENA FCV economies cover other gender considerations that are aligned with the WBG's regional strategy (see box 5.1). For example, the WBG's Country Gender Action Plan in the Palestinian Territories reports that solar power represents a potential infrastructural subdivision that is crucial to promoting women's engagement because of the opportunities it can create in terms of future jobs. This becomes particularly important for the highly educated cohort of young Palestinians, many of whom are women, seeking work in a challenging labor market (Hillis and Constant 2018). In this context, the energy interventions incorporated into the projects attempt to leverage prospects for benefiting women through the deployment of renewable energy programs that target female heads of households and raising awareness on the benefits of solar energy, and promotion of women's engagement across the renewable energy sector.

## FIELD WORK RESULTS

The interactions between gender roles and energy provision span a wide spectrum of issues, including poverty, safety, security, and economic agency. This section utilizes the methods described in chapter 4 to produce data and insights and discuss their significance through the adopted framework of looking at the three domains: household, community, and markets. As discussed, the scope of the data and reliable information that we have obtained is restricted to FCV economies where the WBG has ongoing interventions or operations. These countries are Iraq, Lebanon, Republic of Yemen and the West Bank and Gaza.

### *Household and community*

Lack of access to reliable and clean energy has a disproportionate impact on women. The impact of severe shortages and unreliable supply of electricity in FCV economies affects women the most, as women and girls are typically tasked with household chores, such as cooking, washing, and cleaning, which often require energy.

*In Republic of Yemen,* 56 percent of households interviewed for a study to assess the needs and preferences for home solar systems have reported that they spend days with no source of energy. The women interviewees highlighted challenges with household chores, such as washing

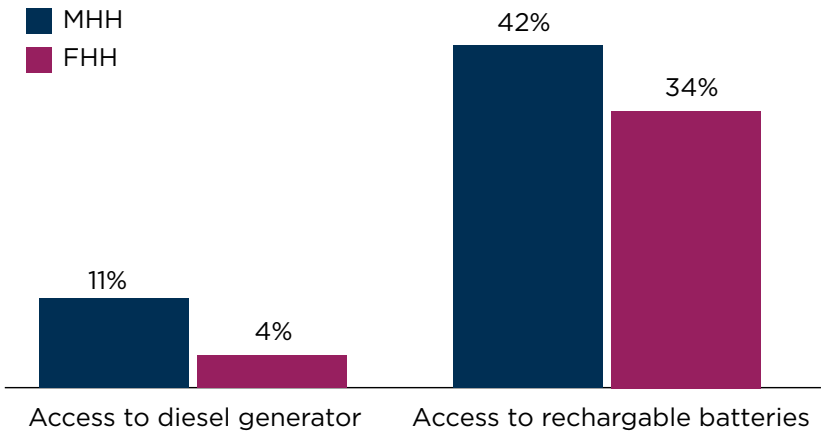
**Table 5.1**

## Gender Entry-Points and Indicators in WBG's Energy Interventions in FCS in MENA

| Country | Project details | Gender entry points | Used indicators |
|---|---|---|---|
| Iraq | Electricity services reconstruction and enhancement project<br>Amount: US$200 million<br>Approval year: 2019 | Energy access among female heads of household | NA |
| | | Income generation opportunities | Number of women reported engaging in income-generating activities due to improvements in electricity service |
| | | Female entrepreneurship | Women-owned businesses reporting increased income due to improved electricity services |
| West Bank and Gaza | Advancing sustainability in performance, infrastructure, and reliability of the energy sector in the West Bank and Gaza<br>Amount: US$200M<br>Approval Year: 2020 | Energy insecurity among female heads of household | NA |
| | | Female employment | Share of female engineers employed in the energy sector |
| | | Female entrepreneurship | Beneficiary women-owned businesses reporting stable incomes due to improved electricity services |
| | Electricity sector improvement project<br>Amount: US$11M<br>Approval year: 2018 | Female unemployment | Share of female engineers employed in the energy sector |
| | | Female unemployment | Beneficiary, women-owned, businesses reporting increased income due to improved electricity services |
| Yemen, Rep. | Yemen Emergency Electricity Access<br>Amount: US$50M<br>Approval year: 2018 | Disproportionate access to energy systems | Beneficiaries reached with financial services—including female borrowers |
| | | Access to financing | The number of previously unbanked adults reached with transaction accounts—including female borrowers |
| | | | People provided with new or improved electricity service, disaggregated by gender |
| | | | Number of focus groups on consumer electricity needs, with note of which groups have majority female participation |

**Figure 5.1**

**Access to Alternative Energy Sources in FHH and MHH in Gaza**




*Note:* MHH = male-headed household; FHH = female-headed household.

and fetching firewood and water. They reported health consequences such as breathing problems and back and joint pain. On the other hand, male participants highlighted issues related to communication, education and health. Sixty-nine percent of interviewed Yemeni women use firewood to cope with the lack of cooking gas. Not only do those women spend a lot of time doing physically demanding tasks manually, they also have to find fuel sources. These may be located far from where they are based, forcing women and girls to carry heavy loads on foot for long distances. These laborious tasks sometimes lead children—especially girls—who support their families to drop out of school.

*In Iraq,* women are tasked with similar household responsibilities. However, with the prolonged and frequent electricity outages, particularly in the summer season,[21] women in households that cannot afford the expensive subscription fee of shared diesel generators often suffer the added inconvenience of conducting housework in excessive heat, with temperatures sometimes rising to 56 degrees Celsius.[22] Activities such as cooking, which expose women to added heat and steam, have been reported by the interviewed Iraqi women as a major cause of skin diseases and aggravation of some illnesses such as asthma. Children also suffer from the adverse health impact of excessive heat. Women are often the main caregivers, further restricting their opportunity to engage in economic activities or paid jobs (Baringanire 2019).

*In Gaza,* on average, electricity supply lasts for only 10 hours per day.[23] A United Nations study shows that such electricity shortages have intensified women's sense of insecurity, with up to 61 percent of women surveyed reporting a belief that, as a result, more women are now exposed to GBV (UNFPA 2017). Compounding this effect, electricity shortages have caused disruptions to available GBV services due to cancellation of activities or overcrowding of women and children seeking refuge from a home without power.

*In Iraq,* nearly all participants in the focus group discussions (FGDs) expressed that they feel a deep sense of insecurity when they are in unlit public spaces at night, reporting frequent sexual harassment incidents and other crimes. Such risks often result in restricting women's movement

21 In the summer, the average power outage is three hours every three hours due to the high demand on electricity because of the intensive use of air conditioning.
22 Without grid-supplied electricity, air conditioning does not operate unless there is access to at least 18 amperes of a shared generator at a cost of ID 10,000 (about US$8) per ampere, which is not affordable to most families.
23 On some days during peak demand periods, Gazans receive as little as three hours of electricity supply per day.

*"I was walking in a side road at night which was unlit and not many people were around. I felt someone touching me inappropriately. I screamed and started running."*

**Iraqi female student**

and mobility, which could ultimately have an adverse effect on their ability to attend evening classes or seek job opportunities with evening work shifts.

*In Gaza*, the frequent and prolonged power outages disproportionately affect female-headed households (FHHs), which have a lower rate of subscription to alternative energy sources. As shown in Table 4.15.1, 4 percent of FHH have access to diesel generators compared to 11 percent in male-headed households (MHH), and 34 percent have access to rechargeable batteries compared to 42 percent in MHH. This disparity in accessing energy alternatives underlines an energy affordability aspect that appears to be especially prevalent in FHHs. Moreover, given that the supply of diesel fuel itself is also unreliable, Gazans, and FHHs in particular, often suffer the impacts of fuel supply disruptions, which halt the operation of the Gaza power plant and the small-scale diesel generators.

Even when electricity is supplied, affordability remains an issue for Gazans, especially FHHs; 58 percent of FHHs are in the bottom 40 percent of the asset index (which takes into account nonmonetary measures of poverty), compared to 41 percent of MHHs (Atamanov and Palaniswamy 2018). Additionally, only 10 percent of FHHs in Gaza earn some kind of income, compared to 58 percent of MHHs.

*In Lebanon*, energy access is not a major issue—despite the existence of prolonged and frequent electricity outages—due to the spread of private diesel generators. However, quality of electricity services and energy affordability are problematic, the latter particularly among the poorest groups. As the Lebanese government is embarking on implementing a reform program that includes tariff adjustments to reduce subsidies, there will likely be an impact on energy affordability, given that female-headed households consume more energy per capita, as discussed. Gender-disaggregated analysis of tariff reform on household expenditures shows that female-headed households would be more negatively impacted, should reforms take place without adequate service improvements.[24]

### *Markets and Economic Agency*

Lack of access to reliable and affordable electricity particularly affects women's entrepreneurship and their ability to generate income. Since women in FCV contexts often rely on informal activities such as sewing, cooking, hairstyling, and making home-made products, electricity is crucial for their work.

*In Iraq*, for example, beauty salons are usually owned and operated by women, because social norms restrict women from going to male hairstylists. Without access to reliable electricity, it is virtually impossible for such businesses to survive, thus aggravating women's unemployment rates and preventing them from engaging in income generating opportunities.

Women participants in the FGDs who are engaged in energy-dependent economic activities have given specific examples of how lack of electricity supply affects their work. For instance, even with access to a generator, most electronic devices (used for more expensive hair treatments such as flat iron needed for keratin treatments) do not work without grid electricity, causing loss of profit and loss of clients when electricity is cut.

*"I could make four dresses per day if I had access to reliable electricity. Each piece is sold for ID 5000–7000. With the current status of power, I can barely manage to finish one."*

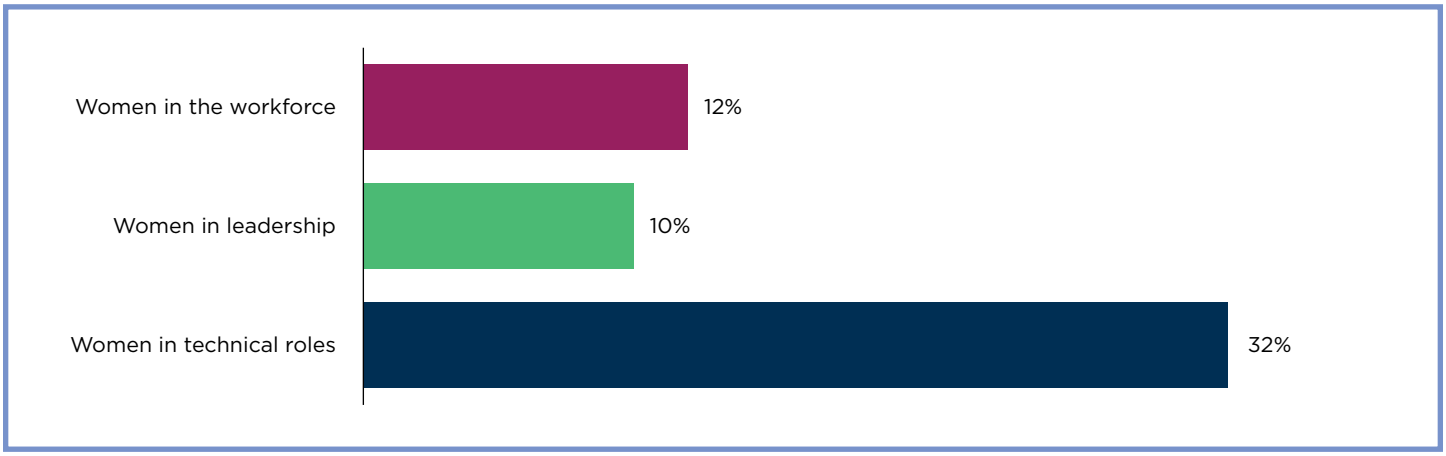
**A female tailoring shop owner**

*In Gaza*, the issue of prolonged disruptions in electricity supply is reported as the second biggest obstacle to growth after political instability (World Bank 2013). This challenge affects male- and female-led businesses alike. Women-owned businesses constitute a significant share (13 percent) of small, medium, and large company owners, while female ownership rises to 25 percent when including micro establishments. Anecdotal evidence suggests that

24 Team's analysis: "Energy and Gender Note for the Lebanon Energy Reform and Development Reform," 2018.

**Figure 5.2**

**Average Percentage of Women in the Total Workforce, Leadership Positions, and Technical Roles of Energy Companies Operating in the West Bank and Gaza**




> *"I had many clients who walked out of the salon frustrated because I could not finish treatment due to unexpected power outages. These clients will never come back"*
>
> **A female hair salon owner**

they are disproportionately affected by lack of electricity, causing a higher rate of business closures.[25]

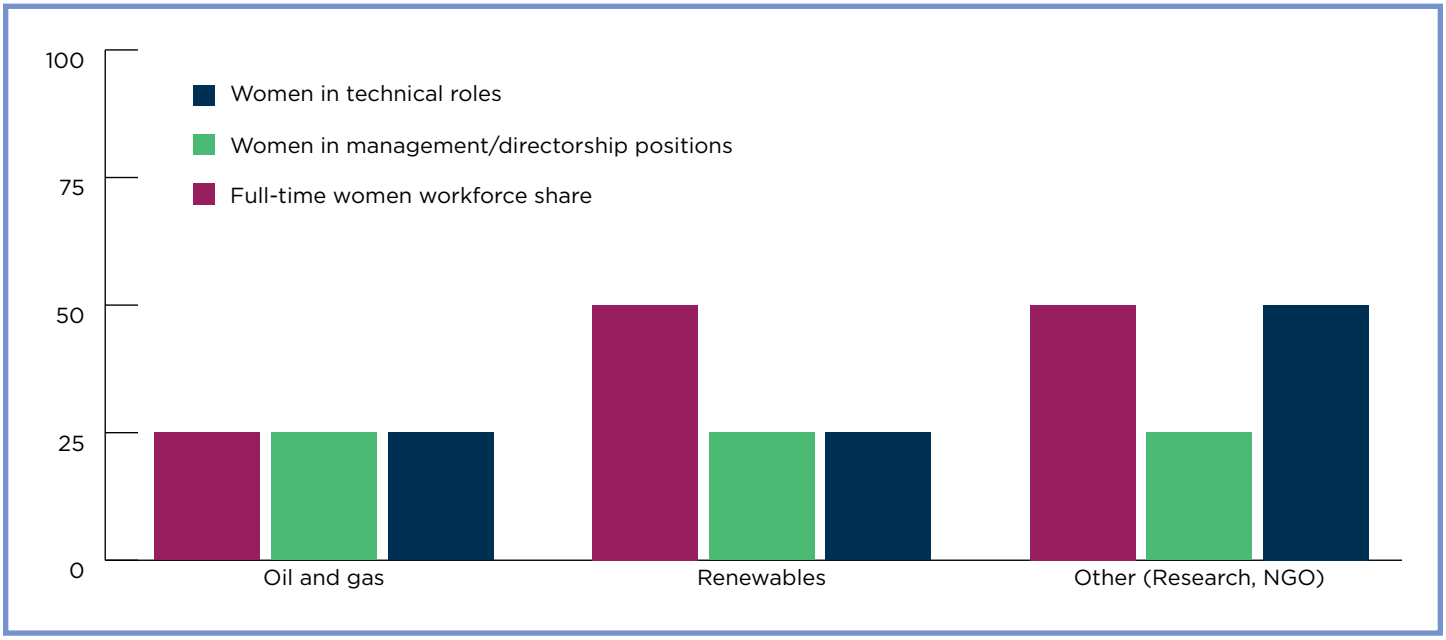
Women are an untapped resource in the energy sector and the wider job market. In Gaza, many women in the labor force are highly educated, with readily available skills, yet are largely out of the job market. Sixty-eight percent of Gazan women in the labor force have postsecondary degrees but almost half (47 percent) are unemployed, compared to 18 percent of men (Hillis, Alaref, and Takkenberg 2018). Furthermore, a study shows that more than 30 percent of female university students across the Palestinian territories graduated from engineering and construction fields of study in 2015 (Islam 2017). While there is little evidence on the distribution of women in the energy sector, in alignment with regional and global trends, women's participation is reportedly better in the West Bank (Hillis. Alaref, and Takkenberg 2018; PCBS 2019).

*In the West Bank and Gaza*, according to a survey on women's participation in the energy sector, women represent 25 percent or less of the workforce in the surveyed companies, with the majority (73 percent) having women make up less than 10 percent of the total workforce.[26] The average percentages of female participation in the total workforce, leadership positions, and technical roles are shown in figure 5.2, which shows clear disparities, especially in the leadership and management areas. Ten out of the 11 firms surveyed so far reported having less than 25 percent of their women employees working in science, technology, engineering, and mathematics (STEM)–based roles. The underrepresentation of women in the energy sector is a global issue that seems to transcend cultural and regional differences.[27] MENA countries, in general, are no exception. However, societal norms and the underdeveloped state of women's economic empowerment exacerbate the gender gap in the energy sector.

25 Team's analysis: "Gender Gap Analysis—West Bank and Gaza ASPIRE MPA." 2020.
26 As of January 2020, 11 companies had responded to the survey. These firms are medium-sized companies and are focused in engineering advisory services (45 percent) and energy production and distribution (36 percent). Seventy-two percent of the surveyed firms work in the renewable energy domain.
27 According to the International Renewable Energy Agency (IRENA), women's share of jobs within the energy sector is between 20 to 25 percent. Even in the renewable energy sector, where gender discrimination is less pronounced, the agency reports a women's share of 35 percent. In the United States, for example, female employment within the solar energy sector is just 27 percent (IRENA 2018).

**Figure 5.3**

**Percentage Ranges of Women's Participation in a Sample of 15 Lebanese Energy Institutions**




*In Lebanon*, women who participated in the FGDs, particularly recent female graduates in STEM fields, perceive the energy sector as unstable, problematic, and corrupt. This reputational issue seems to be a factor contributing to Lebanese women's lack of enthusiasm for working in the energy sector.[28]

As shown in figure 5.3, gender imbalances are most visible in male-dominated industries such as in oil and gas companies and/or institutions, and they become more pronounced with increased levels of seniority in the workplace. However, based on the insights generated by the FGDs in Lebanon, some of the root causes of gender imbalance in the workplace stem from preentry stages in secondary and tertiary education. Some of the mentioned challenges, such as the existence of impeding social norms and lack of information about the options available, are global. Others are particularly relevant to Lebanon's case, such as lack of safe and secure transportation and the energy sector's negative reputation.[29]

Social norms compound the challenges faced by women trying to work in the energy sector. Across the MENA region, society expects men to be the breadwinners. As such, men are often given preference for jobs, which would ultimately impact women's competitiveness in rising and attaining promotions. And while there may be an openness for women to work, they are still expected to fulfill household responsibilities and be

> *"When our company asks employees to come to work after midnight, usually only the male employees attend, while the female ones rarely attend. The latter is for numerous reasons, including the lack of transportation means, lack of safety, parental norms which prevent a female from leaving the house late at night, and family and childcare responsibilities. In such cases, it is very probable that any potential promotion will be given to the male employees and not the females."*
>
> **An FGD participant in Lebanon**

28 Team's analysis: "Energy and Gender Note.".
29 Team's analysis: "Energy and Gender Note"

**Box 5.2**

## Case Study—Promoting Women's Access to Solar Energy and Financial Services in Republic of Yemen

In rural and remote parts of Republic of Yemen, women are disproportionately affected by energy insecurity because of restrictive norms and limited access to financial assets. Cultural norms prevent women from going to public places, like coffee shops and mosques or a neighbor's home if there is no family relation. As a result, the majority of women find themselves with limited channels to receive information about alternative energy options available on the market, and fewer places to charge batteries for lighting or mobile phones. Compounding these challenges, many do not have the right identification documentation and are asset constrained, failing to meet the eligibility requirements of the financing instruments that could enable them to purchase alternative sources of energy.

Unlike the traditional banking sector, the microfinance sector has emerged as a robust channel for developing new lines of business and extending financial services in response to growing need, such as in solar lending. However, much of the lending was going to wealthier households, making it difficult for the poor, especially in the rural and peri-urban areas of the country, to benefit. While the share of female borrowers in certain microfinance institutions (MFIs) was reportedly high in Republic of Yemen, the trend was not the same in rural areas. In addition to restrictive norms and limited access to assets and information, there remains a general lack of knowledge among many (not all) MFIs about the importance of investing in women and few financial packages dedicated for rural women.

In this context, the Yemen Emergency Electricity Access Project, which expands solar PV access by way of subsidized microfinance packages to communities across the rural and peri-urban parts of the country, is working with local institutions to ensure that rural and remote women are able to participate in and can equally benefit from innovative market solutions during times of crisis. To support this objective, the project is implementing four avenues of related work:

1. Gender training to MFIs on benefits of banking for women and integrating a gender lens in their value proposition

2. Tailored community outreach messaging for women about the benefits of solar products offered through the project to respond to the specific issues they have raised during consultations and engaging men through influencers (community leaders) who can reiterate positive messaging about the role of women in solar decision-making

3. A higher financial subsidy for MFIs sales made to females to create incentives from the supply side and level the playing field for rural and peri-urban women

4. The call for proposals to MFIs and potential distributing partners to be circulated in a way that would also reach women's organizations and cooperatives in rural and hard-to-reach areas

Results so far have been positive, with sales increasing steadily among women, showing promise that the preidentified challenges with regard to solar access and financial inclusion are being addressed. However, the majority of sales are in cash, not unlike trends among men. In large part this may be due to economic hardships exacerbated by conflict, leaving the majority of women with a preference to purchase kits upfront, if they can afford it, rather than risk taking out a loan during uncertain times. A cost-benefit analysis of how financial choices are made by vulnerable women and men during times of crisis can help shed light on how such tools can better serve them in the context of service delivery.

*Source:* UNOPS and World Bank 2019.

the primary care providers in their family regardless of their employment status (World Bank 2018c).[30]

*In Lebanon*, one of the main reasons reported by women participants in the FGDs on the disparity between male and female enrollment numbers in STEM fields of study, are the social norms and expectations that shape educational and career goals and aspirations. For example, studying civil engineering might be perceived by parents and female students themselves as a "men's major."

*In Gaza*, a new network, Gaza Women in Sustainable Energy Network, was established to bring together female engineers in Gaza, with the aim of promoting equitable access to sustainable energy resources in Gaza and advancing female engineers in all aspects of sustainable energy. The increased presence of renewable energy projects and programs in MENA's FCV economies is creating positive trends in gender dynamics.

*In Lebanon*, established renewable energy and general energy degree programs have significantly improved female participation, more than have the petroleum-oriented programs. Additionally, renewable energy programs offer an opportunity for working professionals, including women, to make career shifts and to develop skills and compete in the emerging regional and domestic green energy market. Supporting and expanding these programs would directly lead to a higher supply of women in the energy sector workforce. As Lebanon scales up its investments in renewable energy, the demand on these programs will likely increase.[31]

Box 5.2 summarizes a case study of a WBG intervention in the Republic of Yemen to promote women's access to solar energy solutions and financial services.

30 According to the study, over 95 percent of Jordanian women and men are fine with women working so long as certain conditions were met (i.e., women remained responsible for childcare, were not working in a mixed environment, returned home before 5 pm to take care of meals and domestic responsibilities). Societal expectations surrounding married women's access to work were more restrictive than those for unmarried women.

31 Team's analysis: "Energy and Gender Note."

Chapter 6

# Lessons Learned and Recommendations

Working in fragile and conflict situations is challenging in many ways. However, the possibility of a transition to peace also offers opportunities to identify entry points to promote gender equality and women's empowerment and to integrate them, early on, into the design of modern energy interventions and policies. Gender equality is not only a human rights issue but a force that can speed up economic growth and peace in postconflict settings.

Reflecting on what we have covered so far, the first section of chapter 6 shares the lessons learned based on the research and interventions mentioned in this report and outlines specific, context-dependent, recommendations based on the data and insights we gathered from the studied countries.

## LESSONS LEARNED

In this report, we have outlined the realities of the intersection between gender and energy, focusing on states and economies experiencing fragility, conflict, and violence (FCV) in the Middle East and North Africa (MENA), where the World Bank Group has ongoing operations. The lessons learned from past and current projects as well as the experiences collected from other regions and contexts from around the world provide useful insights that can help build an engagement that takes into account gender considerations. These lessons are summarized in the following points:

1. Energy provision (or lack thereof) in a conflict context underlines the importance of having resilient energy systems that can continue to deliver power during and after conflict. As it was demonstrated by the conflicts in MENA, reliance on a central power grid that is vulnerable to attacks and disruptions becomes a real problem. Lack of access to reliable, affordable, and clean energy sources contributes to entrenching gender inequalities and widening of the gap between women and men in human capital development fields such as education, health care, economic participation, and voice and agency.

2. The livelihood of people in FCV contexts, including those in MENA, include additional layers of vulnerabilities such as gender-based violence (GBV), increased sense of insecurity, and loss of income-generating opportunities. Women are more likely to be exposed to these vulnerabilities than men because of the presence of strong gender norms and roles as well as weak protective legal frameworks and institutions.

3. There is a window of opportunity to push for reforms immediately after a conflict has ended. Learning from the Lebanese experience, many of the current energy sector's shortcomings could have been avoided by implementing a reform program soon after the civil war and by initiating effective citizen engagement and communication strategies. Ultimately, a prompt response toward reforms postconflict can have a substantial impact on women's livelihoods and economic

empowerment. The different impact of electricity tariff increase, for example, on women and men needs to be examined and taken into account when designing and implementing social safety programs.

4. In all MENA's FCV situations, including those not highlighted in this study, renewable energy and energy efficiency pose a real opportunity to leapfrog into a new energy model that offers better energy security, affordability, and environmental sustainability. Since women play a big role in terms of influencing energy-use behavior at the household and community levels, special attention should be given to increasing the level of awareness of renewable energy and energy efficiency among women.

5. Lack of data availability and access is a major challenge across MENA, especially in FCV contexts. Therefore, expanding the data- and evidence-generation base, particularly around differences in gender roles, impacts, and agency during and postconflict, is imperative to inform the design of energy operations.

6. Cultural norms and expectations in MENA's FCV situations could hinder women's ability to proactively participate in decision-making spaces and processes. Consequently, the promotion of women's voices and agency would be a critical step to maximize the potential of energy operations and interventions to reestablish peace and induce growth after conflict.

7. The energy sector can be leveraged to offer women a platform to contribute to peacekeeping and sectoral leadership. Additionally, after conflict, large energy infrastructure projects may involve land acquisition, displacement of population, potential loss of income, and the influx of a foreign workforce. These effects do have a gender component that should be studied and mitigated.

The share of female-headed households increases in FCV settings, especially among displaced populations. In Republic of Yemen, United Nations statistics shows that one-third of displaced people live in female-headed households (FHHs); similarly in Iraq, reports show that the share of FHHs can be close to double among the internally displaced when compared to the national average—highlighting the need for targeted efforts to reach these groups and their specific vulnerabilities (Finnish Immigration Service 2018; UNHCR 2018b). In Lebanon and West Bank and Gaza, FHHs are not necessarily poorer than male-headed households in the traditional poverty measurement terms, but like women across the region they face gender-based constraints that disadvantage many of them in their role as primary breadwinners, such as limited access to markets, immobile assets and information, constrained mobility, and restrictive norms.

## RECOMMENDATIONS

The recommendations based on the evidence presented in this report are listed in table 6.1. These recommendations were tailored to country-specific considerations and context based on the gender, energy, and fragility profiles discussed in chapter 2. Although these recommendations stem from a specific set of data and operations, they can be considered for other FCV contexts in MENA, which have not been discussed, such as Syria and Libya. It should be noted that more work needs to be done to better link evidence generated by teams working on the ground to broader recommendations on targeting, sequencing, design, implementation, and monitoring and evaluation in different FCV contexts.

Table 6.1

## Context-Specific Recommendations

| Consideration | Impacted countries | Recommendations |
|---|---|---|
| **Existence of strong gender norms**<br>Relevant gender domain(s): household, community, and markets | Iraq and Yemen, Rep. | The stronger the gender norms in a specific context, the more an intervention would need to take a gender-differentiated approach. In other words, where social roles, physical spaces, occupations, etc., are highly separated between the sexes, it will be critical to take on a differentiated analysis to better understand the impact of FCV on the needs, constraints, and opportunities of women, girls, men, and boys.<br><br>Invest in centers of excellence and vocational training facilities, especially in rural regions, to help resolve the mobility challenges faced by women due to cultural norms, cost of transportation, and the increased level of insecurity in FCV contexts. Moreover, involving families and positive engagement of fathers and male guardians could help overcome some of the social and cultural challenges. |
| **Disparity between men and women in accessing science, technology, engineering, and mathematics education opportunities and entry positions within the energy sector**<br>Relevant gender domain(s): markets | Iraq, Lebanon, Yemen, Rep., and West Bank and Gaza | Initiate a multilevel strategy, across a woman's education pathway, to harness talent and build skills that can enhance their opportunities to access jobs in the emerging energy sector after conflict. Efforts to promote gender equality in the energy sector should look beyond numbers and percentages and offer women real opportunities for mentorship and advancement on the career ladder.<br><br>Integrate solutions that ensure gender equality in energy reforms after conflict. This is especially relevant to power utilities, which have a highly gender-disproportionate workforce. The rebuilding or modernization of these utilities after conflict can be leveraged to build a more gender-inclusive workplace and is an opportunity to redefine that sector's image that could, in turn, attract more women to join the energy workforce. |
| **Existence of refugees and/or internally displaced persons**<br>Relevant gender domain(s): household and community | Iraq, Lebanon, and Yemen, Rep. | Given the high share of female-headed households (FHHs) among displaced populations, focus on identifying the needs and priorities of FHHs and targeting them for improved access to basic services, taking into account mobility and access to information. Additionally, coordinate with development partners and support investments in safety through street-lighting initiatives in camps and informal settlements. Finally, explore potential for making available clean, mobile, energy-efficient cookstove options to ease the harmful effects of smoke among displaced populations, who are more likely to be cooking on unsafe (makeshift) stoves and using dirty fuels. |

**Table 6.1 (cont.)**

## Context-Specific Recommendations

| Consideration | Impacted countries | Recommendations |
|---|---|---|
| **Lack of access to reliable data**<br>Relevant gender domain(s): household, community, and markets | Yemen, Rep. | In countries with active conflicts, such as Republic of Yemen, it is imperative for teams that are designing an energy intervention to liaise and get insights from social development and/or social protection colleagues as well as experts on the ground (UN agencies, civil society, etc.) early on in project preparation to get a better understanding on potential gender challenges, and how they can be addressed through the project. Early consultations with all key stakeholders are even more crucial in an FCV setting.<br><br>Given the difficulty in working directly in FCV contexts, mainly due to security reasons, partnering with existing local and international organizations to leverage their local connections and presence on the ground to collect data can go a long way in obtaining data and insights that would be difficult to get hold of otherwise. Additionally, design and implementation teams could also think of innovative ways of data collection, such through phone calls, apps, or online surveys. |
| **Disparity between men and women in awareness and resourcefulness in accessing information and technical support to deploy renewable energy solutions**<br>Relevant gender domain(s): household and markets | Iraq, Yemen, Rep., and the West Bank and Gaza | Based on early evidence generated from the region, there seems to be some gender disparity in accessing information on the utility of decentralized renewable energy systems, such as rooftop solar photovoltaic systems. Also, there seems to be gender disparity in accessing the technical support required to operate and maintain such decentralized energy solutions. Therefore, ensure that all communications are designed in a way that take into account the specific needs, concerns, and priorities of women and men across different population groups, and is delivered in a way that will reach men and women equally. This can be done by using multiple delivery channels—new and traditional media. |
| **Postconflict reconstruction of energy infrastructure**<br>Relevant gender domain(s): Community | Iraq and Yemen, Rep. | Postconflict reconstruction projects usually involve a large influx of migrant and/or short-term workers and contractors. Such operations should include contractual provisions for implementing firms to regulate contractors' behavior toward local women and girls. Operations can also support the establishment of local support centers for women and children subjected to violence and abuse. |

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