The Impact of the Electricity Crisis on The Humanitarian & Living Conditions in the Gaza Strip

Survey Study

November 2020
SUMMARY

1. BACKGROUND & METHODOLOGY
2. EXECUTIVE SUMMARY
3. RESEARCH FINDINGS
4. CONCLUSIONS
5. APPENDIX - INSTRUMENTS
BACKGROUND & METHODOLOGY
BACKGROUND AND OBJECTIVES

Background

▪ The International Committee of the Red Cross (ICRC) is aiming to produce information materials to highlight the impact of the electricity problem on the life of people in the Gaza Strip.

▪ The Red Cross will work to extrapolate people's opinions on the problem through questions addressed to the beneficiary group of Red Cross projects, as well as to a random group of society with a random sample of 300 people in the Gaza Strip of different ages.

Objectives

▪ The objective is to highlight the humanitarian challenges and needs posed by the electricity crisis for the Gaza strip.

▪ Present these information material to the international community that highlight the daily challenges faced by the population in the Gaza strip in the light of the electricity crisis.
STUDY DESIGN OVERVIEW

PLACE
- The 5 Southern Governorates (Gaza Strip)

STUDY APPROACH
- Telephone Interview
- Questionnaire length: 7-12 minutes
- Language: Arabic

STUDY SAMPLE & DESIGN
- Target Group: General Population Adults 18+
- Representative Quota for the 5 Governorates
- Sample Size: 347 Respondents

TIMING
- September to November 2020
## DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Age</th>
<th>18-35 years</th>
<th>36-55 years</th>
<th>56 years above</th>
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<tbody>
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<td>%15</td>
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<table>
<thead>
<tr>
<th>Gender</th>
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<th>Female</th>
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<tbody>
<tr>
<td></td>
<td>%62.5</td>
<td>%37.8</td>
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<table>
<thead>
<tr>
<th>Governorate</th>
<th>North Gaza</th>
<th>Gaza</th>
<th>Dair Al-Balah</th>
<th>Khan Younis</th>
<th>Rafah</th>
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</thead>
<tbody>
<tr>
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<td>%15.2</td>
<td>%16.1</td>
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<table>
<thead>
<tr>
<th>Construction type</th>
<th>Cement</th>
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<th>Asbestos</th>
<th>Living area</th>
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</thead>
<tbody>
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<td>%80.1</td>
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<td>%12.7</td>
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<td>%15.3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>City</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>%56.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Camp</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>%28.5</td>
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</table>

<table>
<thead>
<tr>
<th>Nature of work</th>
<th>Students</th>
<th>Housewife</th>
<th>Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%2</td>
<td>%13.5</td>
<td>%35.7</td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Daily worker</th>
<th>Private business</th>
<th>Private sector</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>%3.6</td>
<td>%17.3</td>
<td>%8.9</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Private sector employee</th>
<th>Government employee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%6.3</td>
<td>%11.5</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

• 86.2% of the sample reported that they received electricity for (6–8) hours daily on average during the year.

• 80.1% of the sample reported that the lowest amount of electricity they received in one day last year was less than 4 hours.

• 26.8% of the sample reported that they could not access any alternative power source either at high or low capacity, in which 91.4% of them stated they were unable to pay for additional energy, while 8.6% said they could not access any alternative power source because they initially refused to pay for additional energy costs.

• 57.1% who rely on alternative energy sources cannot access alternative high-capacity energy sources sufficient to meet their needs and work.

• 22.0% of those who rely on alternative energy sources have access to commercial generators available in residential neighborhoods as a high-power alternative energy source, compared to only 8.7% who rely on solar systems as an alternative energy source.

• Village residents can have access to a lower alternative energy source than other residents of cities and camps.
EXECUTIVE SUMMARY

- Residents of Gaza governorate have more access to alternative energy sources, followed by northern Gaza governorate, central governorate, Rafah governorate, and finally Khan Younis governorate which have less access to alternative energy sources.

- About 77.0% of the sample think that the most important problems due to lack of electricity are "their inability to complete electricity-based household work" and "inability to store food and vegetables in the refrigerator for fear of damage". While 57.0% of the sample believes that the most important problems due to lack of electricity are "failure of electrical appliances in case of a frequent and sudden power outage", and "the heat suffering during the summer because of the inability to cool the environment".

- Other energy sources that citizens have access to have contributed to a limited extent in reducing or limiting some of the problems caused by the lack of electricity provided by the public network.

- 94.0% of citizens believe that the lack of electricity is affecting their mental health.

- 82.0% of citizens are unable to refrigerate food due to the lack of electricity provided by the public network.

- The more hours of electricity citizens get from the public network, the more they can refrigerate and store food.
EXECUTIVE SUMMARY

• The higher the power of alternative energy sources available, the more the refrigerator and coolers are used to refrigerate food by people.

• One of the adjustment mechanisms used in case food is unable to be refrigerated is to go to the market every day to buy the daily needs of food and drink as indicated by 51.2% of the sample, while people are not buying foods that need refrigeration for fear of corruption was indicated by 40.3%. Moreover, 8.5% use another person’s refrigerator to refrigerate their food as an adaptive mechanism.

• When the power is restored, citizens take several actions as their first action; almost 53.0% reported that they operate the necessary household appliances such as (fan - air-conditioning - fridge - washing machine - iron - electric oven - TV, etc.). However, 24.2% said they are operating the water pump to fill the tanks as the first act on the return of electricity, while 15.3% charge home batteries for recharging.

• The lack of electricity has a major impact on the daily work of citizens, such as changing the daily routine of life, according to 37.9% of citizens, changing the working hours, as 35.9% of citizens have said, and losing the source of livelihood to rely on electricity, according to 15.9%. The reduction in working hours, therefore, is the decrease in workers' wages, as 10.3% of citizens said.
EXECUTIVE SUMMARY

• The lack of electricity has had a significant negative impact on the lives of citizens in the Gaza Strip, which has contributed to the worsening of the difficult humanitarian situation and the deteriorating economic conditions caused by the blockade; Such as damage to electrical equipment, increased physical cost of life, poor health of some patients, and poor mental condition.

• About 99.42% of citizens believe that availing of 24-hour power can change their lives.
RESEARCH FINDINGS
1. The Amount of Electricity a Citizen Receives From the Public Electricity Grid
1. The amount of electricity a citizen receives from the public electricity grid:

- 86.2% of the sample indicated that they received electricity for (6 – 8) hours a day on average during the year.

- Comparing the current year to the last year, there has been an improvement in the number of hours a citizen gets electricity daily.
1. The amount of electricity a citizen receives from the public electricity grid:

- 80.1% of the sample indicated that the least amount of electricity they received in one day last year was less than 4 hours.
1. The amount of electricity a citizen receives from the public electricity grid:

- There are no differences between the residents of the village, city, and the camp in the number of hours of electricity the population receives.
1. The amount of electricity a citizen receives from the public electricity grid:

- Khan Younis governorate was the most conservative which got (6 - 8) hours of electricity (as stated by 92.9% of Khan Yunis governorate's sample)

- Middle Gaza, comes next, then Rafah, and Gaza was the least governorate that got (6 - 8 hours) of electricity.

<table>
<thead>
<tr>
<th>Khan Younis Governorate</th>
<th>Dair Al-Balah Governorate</th>
<th>Rafah Governorate</th>
<th>Gaza Governorate</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-10 hours</td>
<td>8-10 hours</td>
<td>8-10 hours</td>
<td>8-10 hours</td>
</tr>
<tr>
<td>1.8%</td>
<td>3.8%</td>
<td>17.1%</td>
<td>0.8%</td>
</tr>
<tr>
<td>6-8 hours</td>
<td>6-8 hours</td>
<td>6-8 hours</td>
<td>6-8 hours</td>
</tr>
<tr>
<td>92.9%</td>
<td>90.6%</td>
<td>82.9%</td>
<td>82.5%</td>
</tr>
<tr>
<td>4-6 hours</td>
<td>4-6 hours</td>
<td>4-6 hours</td>
<td>4-6 hours</td>
</tr>
<tr>
<td>3.6%</td>
<td>3.8%</td>
<td>0.0%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Less than 4 hours</td>
<td>Less than 4 hours</td>
<td>Less than 4 hours</td>
<td>Less than 4 hours</td>
</tr>
<tr>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Zero hours</td>
<td>Zero hours</td>
<td>Zero hours</td>
<td>Zero hours</td>
</tr>
<tr>
<td>1.8%</td>
<td>1.9%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

0.0% 50.0% 100.0%
2. Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.
2. Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.

- 26.8% could not access any alternative power source either at high or low power.
- 73.2% could access one or more alternative energy sources.
2. **Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.**

- **91.4%** cannot access any alternative power source because they are unable to pay for additional energy.
- **8.6%** refusal to pay for additional energy.

![Chart showing reasons for inability to pay additional energy costs](chart.png)
2. Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.

- 57.1% rely on a low-power replacement power source (a low-power grid and a 12-volt battery) as this system is the lowest-quality alternative energy source due to the low financial cost of this source compared to other power sources.
- 22.0% rely on commercial generators in residential neighborhoods as a high-capacity alternative energy source.
- 8.7%, depending on solar systems as an alternative energy source.
2. **Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.**

- Villagers have less access to alternative energy sources than other residents of cities and camps.
2. Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.

- Residents of Gaza governorate have more access to alternative energy sources.
- Northern Gaza governorate comes next, the middle governorate, Rafah governorate, and Khan Younis governorate, with less access to alternative energy sources.
2. Alternative sources of electricity from the public network, access to it, and reasons why citizens are prevented from obtaining it.

Alternative energy sources for those who have access to it, by governorates

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>North Gaza</th>
<th>Gaza</th>
<th>Dair Al-Balah</th>
<th>Khan Younis</th>
<th>Rafah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar energy</td>
<td>6.5%</td>
<td>9.9%</td>
<td>13.9%</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Commercial generator</td>
<td>11.3%</td>
<td>33.7%</td>
<td>18.5%</td>
<td>6.7%</td>
<td>33.3%</td>
</tr>
<tr>
<td>Private generator</td>
<td>4.8%</td>
<td>4.0%</td>
<td>2.7%</td>
<td>3.3%</td>
<td></td>
</tr>
<tr>
<td>LED and battery network</td>
<td>71.0%</td>
<td>42.6%</td>
<td>59.5%</td>
<td>66.7%</td>
<td>66.7%</td>
</tr>
<tr>
<td>UPS battery and transformer device</td>
<td>6.5%</td>
<td>9.9%</td>
<td>10.8%</td>
<td>13.3%</td>
<td></td>
</tr>
</tbody>
</table>

Legend: North Gaza - Red, Gaza - Orange, Dair Al-Balah - Brown, Khan Younis - Purple, Rafah - Yellow
3. Everyday problems and impacts due to lack of electrical power
3. Everyday problems and impacts due to lack of electrical power:

- Inability to complete household work that depend on electricity: 77.50%
- Inability to store foods and vegetables in refrigerators for fear of spoilage: 76.40%
- Malfunction of electrical devices in the event of frequent and sudden power outage: 57.10%
- Suffering from heat during the summer due to the inability to cool the environment: 57.10%
- Water loss for home use: 54.20%
- Problems with completing academic tasks and requirements: 38.60%
- The necessity to adapt to a specific lifestyle: 34.00%
- Suffering from cold during the winter due to the inability to warm the environment: 22.50%
- Impact on ability to work: 21.90%
- The financial burden to pay for alternatives: 19.30%
- The environment is polluted due to the inability to treat the wastewater: 1.40%
3. Everyday problems and impacts due to lack of electrical power:

A comparison of the problems caused by the lack of electrical energy by gender
3. Everyday problems and impacts due to lack of electrical power:

The contribution of alternative energy sources to solve the problems caused by the lack of electric power

<table>
<thead>
<tr>
<th>Problem</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inability to complete household work that depend on electricity</td>
<td>78.0%</td>
<td>22.0%</td>
</tr>
<tr>
<td>Inability to store foods and vegetables in refrigerators for fear of spoilage</td>
<td>79.5%</td>
<td>20.5%</td>
</tr>
<tr>
<td>Malfunction of electrical devices in the event of frequent and sudden power outage</td>
<td>57.5%</td>
<td>42.5%</td>
</tr>
<tr>
<td>Suffering from heat during the summer due to the inability to cool the environment</td>
<td>58.7%</td>
<td>41.3%</td>
</tr>
<tr>
<td>Water loss for home use</td>
<td>53.5%</td>
<td>46.5%</td>
</tr>
<tr>
<td>Problems with completing academic tasks and requirements</td>
<td>41.7%</td>
<td>58.3%</td>
</tr>
<tr>
<td>The necessity to adapt to a specific lifestyle</td>
<td>66.5%</td>
<td>33.5%</td>
</tr>
<tr>
<td>Suffering from cold during the winter due to the inability to warm the environment</td>
<td>77.6%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Impact on ability to work</td>
<td>75.2%</td>
<td>24.8%</td>
</tr>
<tr>
<td>The financial burden to pay for alternatives</td>
<td>76.0%</td>
<td>24.0%</td>
</tr>
</tbody>
</table>
4. The effect of the lack of electric power on citizens' Mental health
4. The effect of the lack of electric power on citizens' Mental health:

- **Male**: 94.50% Yes, 5.50% No
- **Female**: 93.80% Yes, 6.20% No
4. The effect of the lack of electric power on citizens' Mental health:

Comparison of age groups

- 18-35: 92.3% Yes, 7.7% No
- 36-55: 95.5% Yes, 4.5% No
- 56+: 94.2% Yes, 5.8% No
5. The impact of the lack of electricity on citizens' ability to refrigerate food
5. The impact of the lack of electricity on citizens' ability to refrigerate food:

A comparison between citizens' ability to refrigerate food and increase the number of hours of electric energy.
5. The impact of the lack of electricity on citizens' ability to refrigerate food:

A comparison between citizens' ability to refrigerate food and their ability to access an alternative energy source.
6. Adaptation mechanisms in the event of food refrigeration failure
6. Adaptation mechanisms in the event of food refrigeration failure

Coping mechanisms used when food cannot be refrigerated

- Not to buy foods that need refrigeration for fear of spoilage: 40.3%
- Use someone else's refrigerator: 8.5%
- Going to the market every day: 51.2%
7. Actions by citizens on the return of the electric current
7. Actions by citizens on the return of the electric current

- Charge the batteries for the replacement of power: 15.3%
- Cellular devices charging: 7.5%
- Operating necessary household appliances: 53.0%
- Run the water pump to fill reservoirs: 24.2%
8. The impact of the lack of electricity on citizens' daily business
8. The impact of the lack of electricity on citizens' daily business

- **Loss of livelihood as work depends on electricity**: 15.9%
- **Change in working hours**: 35.9%
- **Reduction in working hours**: 10.3%
- **Changing the daily routine of life (sleep and wake times - study dates - household chores)**: 37.9%
9. Power shortage affects citizens' lives
9. Power shortage affects citizens' lives

The inability of persons with disabilities to charge a...
- Poor mental state: 10.1%
- Poor health of some patients: 15.0%
- Inability to perform own business: 7.9%
- Loss of scholarship opportunities: 1.9%
- Inability to pursue education and study: 7.5%
- Damage to electrical appliances: 24.0%
- Spoilage of food: 4.5%
- Increase material cost: 18.0%
- Increase the burden of household chores: 7.5%
10. Can owning 24 hours of energy a day change the lives of individuals?
10. Can owning 24 hours of energy a day change the lives of individuals?

99.42% of citizens believe that having 24 hours of energy a day can change their lives.
CONCLUSIONS
CONCLUSIONS

▪ The majority of the sample had access to electricity for (6-8 hours per day, on average during the year, and that the lowest amount of electricity that citizens received in one day last year was less than 4 hours).

▪ Three-quarters of Gaza’s citizens have access to one or more alternative energy sources, whether low-capacity, such as an 18-volt LED network or high capacity such as relying on commercial generators available in residential neighborhoods.

▪ Almost 25% of citizens have no access to an alternative energy source because they are unable to pay for additional energy or have a primary refusal to pay for additional energy, this means that they should be assisted.

▪ Villagers have less access to alternative energy sources than other residents of the cities and camps.
CONCLUSIONS

- More than 75% of citizens suffer from many problems resulting from lack of electricity, such as "their inability to complete electricity-based household work" and "inability to store food and vegetables in the refrigerator for fear of spoilage.

- Apart from electrical failure in the event of frequent and sudden power outages, severe heat suffering during the summer due to an inability to cool the environment, and loss of water for household use.

- The residents of the Gaza governorate have more access to alternative energy sources, followed by the northern Gaza governorate, the Middle governorate, Rafah, and lastly Khan Younis governorate which have less access to alternative energy sources.

- If assistance & support is provided, it should be allocated to the villagers.
CONCLUSIONS

• One problem caused by the lack of electricity also is its negative impact on the mental health of the vast majority of citizens.

• In addition to the daily negative impact of the lack of electricity, such as changing working hours, the loss of livelihoods to depend on electricity, and a reduction in working hours.

• The stated justifies the need to intervene to help, especially if we know that the more hours of electricity citizens have, the more they can refrigerate and store food, and that is, the less alternative energy systems that allow the operation of refrigerators and freezers used to refrigerate and preserve food.
Thank You

ICRC