



Cutting the Electricity Supply to Gaza – Consequences and Implications

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EXECUTIVE SUMMARY: This policy brief provides a short background on Gaza’s electricity and water sectors and examines the immediate consequences of cutting off supply to the Gaza Strip. Overall, it argues that the tactical benefits from such a move are somewhat limited since Hamas has adapted to frequent supply cuts with a wide array of small-scale generators and rooftop PV panels, leaving the population to absorb the brunt of the shortage. The broader impact of the power outage will be on the ability to supply water to the Gaza Strip, which can create a humanitarian crisis if not addressed.

As part of the ongoing “Swords of Iron” operation in Gaza, the Israeli Ministry of Energy announced on October 12, 2023, that it had cut off electricity, water, and diesel supply to the Gaza Strip.

During times of peace, 50% of the electricity in Gaza is provided by Israel [through ten points of entry](#), amounting to approximately 120MW per day. Israel provides electricity at no cost to Gaza. Although technically, the Palestinian Authority (PA) is responsible for paying for the electricity supply to Gaza, it instead [accumulates the debt](#) until it is periodically forgiven and erased. Current electricity debt [stands at 2 billion NIS](#) (approximately 500 million USD).¹

The other half of Gaza’s electricity is generated independently. Gaza has one diesel-fueled power plant that produces around 65MW, providing 25% of Gaza’s supply. The rest of the electricity is generated through [a wide array of rooftop solar photovoltaic \(PV\) panels](#) and private diesel generators in residential areas,

government buildings, and hospitals. During the day, around 25% of Gaza's electricity is generated through PV panels, representing one of the world's highest shares. This was made possible through multiple funding projects led by the United Nations Development Program (UNDP) and other intergovernmental organizations in the past decade. At night, private diesel generators replace the PV panels.

Despite these trends, the [electricity infrastructure in Gaza is in deplorable condition](#). The population of Gaza receives an average of four hours per day of continuous electricity supply from the main grid. Much of this is due to the dilapidated electricity infrastructure in Gaza that was damaged during Operation Protective Edge in 2014. Though large sums in foreign aid were delivered to Hamas specifically to reconstruct the grid, [Hamas has diverted the funds elsewhere](#) and left the grid in its current condition. This has forced Gaza residents to seek private solutions like small-scale diesel generators and rooftop PV if they can afford it.

Due to these characteristics, the immediate effect of cutting off the electricity supply from Israel to Gaza is somewhat limited. As noted, the population of Gaza is accustomed to not relying on the main grid. Government buildings, hospitals, and the wealthier parts of the population have already invested in private solutions and can continue to generate electricity depending on how much diesel reserves they hold. In tactical terms, Hamas headquarters and underground bases will also continue to have electricity, as they likely accumulated diesel for weeks or months ahead in preparation for the events of October 7.

In addition to cutting off direct electricity supply, Israel has also announced that it has cut off diesel supply into Gaza. During peacetime, Israel provides Gaza with diesel from the oil refineries in Haifa. Hamas also sometimes purchases more expensive diesel from Egypt that is carried by truck. Israel has announced that it has also blocked the Egyptian route, which puts a tight timeline on Gaza's ability to continue to generate its own electricity. When Israel announced the supply cut, Hamas announced on the same day that the Gaza power plant had run out of diesel and was shut down. This is highly unlikely since the power plant operates with no fewer than four days' worth of diesel in storage and can hold up to two weeks' worth. If the power plant ran out of diesel so soon into the operation, it means Hamas depleted the reserves. This in turn likely means the diesel was diverted to Hamas bases to allow their generators to last longer, but it comes at the expense of the population.

The broader impact of a long-term power outage in Gaza will be on its water supply and sewage treatment, which cannot operate without continuous electricity supply. Israel supplies up to 10% of Gaza's water consumption, around 18 million cubic meters annually. The rest is produced through local reservoirs in Gaza, [but about 75% of that water is not fit to drink](#) and can only be used for irrigation. The EU provided funds to construct pipelines and a water treatment facility in Gaza to address this issue, but the water cannot flow through the pipelines without continuous electricity supply. Adding to this problem is that many segments of the water pipelines were recently dug out by Hamas to be converted into weapons, [as per its own admission](#). This forces large segments of the population in Gaza to rely on water trucks and private storage.

In terms of international law, Israel is walking a fine line. At the moment of writing this policy brief, Israel has not destroyed the power plant in Gaza or the capacity to resume electricity and water supply to Gaza once the operation ends. So long as Israel can show that the supply cuts are a time-limited measure of war meant to hinder Hamas's ability to operate and pressure it to release hostages, it would not be considered a war crime. However, as time goes on, if Israel does not allow some diesel and water supply to enter Gaza via trucks for hospitals and other essential needs, it may create a humanitarian crisis. This can potentially be designated as an illegal collective punishment. In addition, if Israel's actions are seen as motivated by a sense of vengeance and a desire for reprisal rather than as a temporary tactical measure during the war, it may be considered a war crime.² In that sense, recent statements by Israeli ministers, Knesset members, and security officials that Israel's goal is to "wipe Gaza off the map" are harmful to Israel's ability to receive international legitimacy and may create severe legal consequences for senior Israeli officials in the aftermath of the war.

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¹ The current Israeli government made a recent attempt in September to claim the PA's electricity debt by withholding its tax income, but this measure dissipated as with previous attempts. Previous attempts to claim Gaza's electricity debt or threaten to disconnect it were aborted, mainly due to the legal consensus that Israel is responsible for supplying necessities to the Gaza Strip despite no longer occupying it de facto. The author would like to thank Dr. Ziv Bohrer for these legal comments.

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