

## Lebanon Energy Crisis: Time to Reform

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### Introduction

The attention of the world's energy sector is clearly focused on Russia and Ukraine, but the ongoing crisis in Lebanon warrants our collective attention.

On August 4, 2020, cargo in a port warehouse ignited in a violent explosion that tore through Beirut, killing more than 170 people, wounding 6000 and leaving some 300,000 homeless. This was a turning point for Lebanon, as it struggles through one of the most challenging periods of its modern history.

The situation is horrifying. Lebanon is being battered by a confluence of crises engulfing national security, politics and government, integrity in public office, the economy and banking sector, social unrest, energy instability and environmental degradation. Each is feeding off the others to create a storm rooted in Lebanon's failed economic, social, environmental policies. Deliberate policy inaction has led to the World Bank describing Lebanon's economic crisis as [one of the worst economic depressions](#) since the 1850s.

With a Debt-to-Gross Domestic Product (GDP) ratio over 156 percent, and a gross public debt of US\$87 billion, Lebanon is the fifth most indebted country in the world. The government will have no choice but to negotiate with the International Monetary Fund (IMF) and accept a financial support package to address the macroeconomic imbalances.

## The Power Crisis

At the center of Lebanon’s economic disasters is a failing power sector. Lebanon has not had consistent, 24-hour power since its civil war ended in 1990. The country’s recent economic meltdown has led to power cuts of up to 23 hours a day, forcing many people and businesses to rely on expensive private generators.

The energy sector alone has contributed to about half of the country’s public debt since 1990. Despite such high levels of spending, Lebanon’s electricity supply [ranks among the very worst](#) world-wide, with inadequate capacity, rolling blackouts, and reliance on expensive and polluting private diesel generation. The existing generation resources owned by the nation’s electric utility, Electricité du Liban (EDL), are dominated by thermal power plants that are currently fueled by heavy fuel oil (HFO) or diesel (gas oil).

Renewable energy constitutes [less than 4 percent of Lebanon’s total power production](#), mainly via hydropower with a tiny contribution from other forms of renewable energy. Lebanon introduced a policy goal in 2018 aiming to supply 30 percent of total primary energy consumption (electricity and heating demand) from renewables by 2030, but there appears to be little action so far.

Energy imports accounted for 96.8 percent of primary supply, and only 3.2 percent was locally produced from hydroelectric power plants and solar water heaters (SWHs).

Annual budgetary transfers to EDL averaged [3.8 percent of the country’s GDP](#) over the last decade, amounting to nearly half of the overall fiscal deficit. At its peak in 2012, the government transferred US\$2.2 billion to EDL, equivalent to 5.1 percent of GDP. EDL’s revenue now only covers 4 percent of its US\$800 million operating costs.

Only 64 percent of EDL bills are being paid, and EDL’s retail tariffs, which currently stand at an average of US¢ 9.5 kilowatt-hour (kWh), have not changed since 1994. In a comparison of average end-user and cost-recovery tariffs across the Middle East and North Africa region, Lebanon’s costs were second only to Djibouti (Fig. 1).

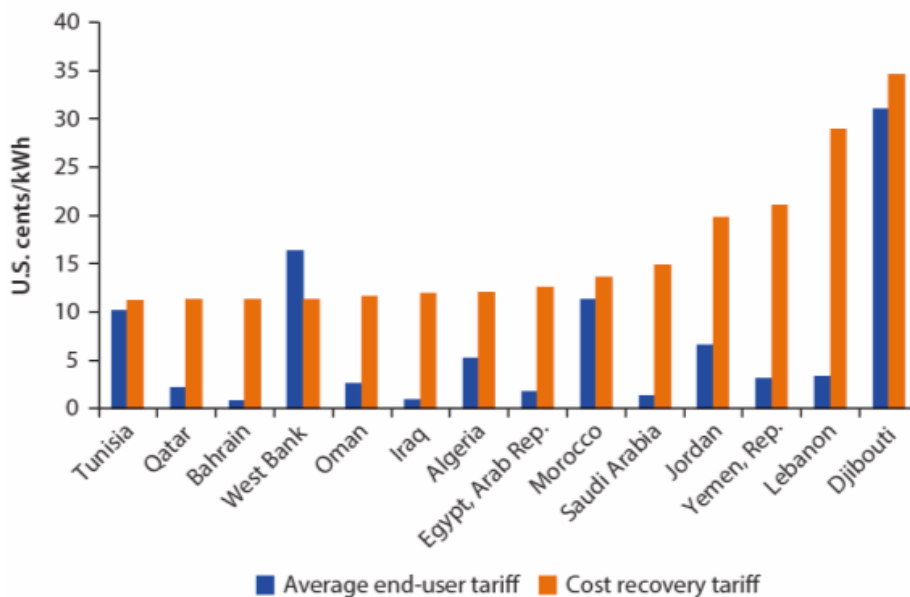


Figure 1: 2013 tariff comparison in the MENA Region (Source: World Bank Power Sector Emergency Action Plan White Paper)

The need for continuous government transfers to the sector is derived from substantial reliance on fuel oil, below-cost recovery tariffs, high network losses, weak governance, corruption and mismanagement, and the sector's overall operational inefficiency.

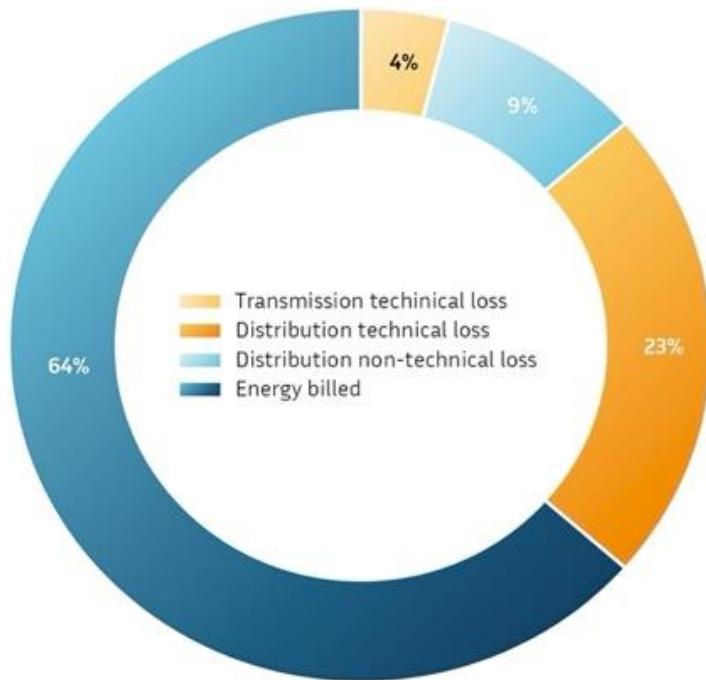


Figure 2: EDL Network Losses in 2018 (Source: World Bank)

### Dealing with the Crisis

There is a need to push forward the necessary structural reforms to remove growth bottlenecks and help external rebalancing. These reforms should include at least three aspects:

- Implementing fundamental reforms in the electricity sector, including elimination of costly subsidies, expanding production capacity, and rebalancing the energy mix, while minimizing the impact on vulnerable populations.
- Improving governance and reducing corruption.
- Increasing energy production and relying on regional import and collaboration.

Vested interest and corruption have been the driving forces opposing serious reforms. Analysis points to the following as initial steps that might help:

- Re-engineering and enhancing the distribution network to develop a smart grid and provide services based on defined key performance indicators (KPIs).
- Resolving transmission bottlenecks is a must—and even a prerequisite. Otherwise, generation investments will not be optimized, and Lebanon will continue to have power shortages.

- Reducing technical losses, which amount to nearly 40 percent of total production (Fig. 2) and are costing more than US\$500 million annually. These losses, including electricity theft, manipulation of meters, illegal extensions outside the meter, direct theft from lines, hidden extensions from direct stations, and uncollected bills, can be addressed by awarding professional private companies distribution works, improving customer services including billing and collection, and building a smart grid.
- Balancing the sector's finances by adjusting tariff to fuel pricing.
- Implementing an ambitious renewable energy program to rebalance the current costly and inefficient energy mix dominated by hydrocarbons.
- Involving the private sector (Independent Power Producer modality) in the construction of new power plants. EDL cannot and should not do it in its current corporate form.
- Developing political consensus to corporatize EDL through company law and appoint an EDL Director General and new independent board members. One option is to transform EDL into a single power purchaser and generator to be privatized.
- Appointing the Electricity Regulatory Authority (ERA) to regulate pricing, reinforce proper metering and ensure proper planning and investments.
- Reforming the current volumetric tariff structure and to introduce gradual tariff adjustment with a clear safety net and smart subsidies for the poor.
- Replacing the fuel procurement processes to make it more transparent and subject to control. This is a main source of corruption.
- Installing centralized combined cycle gas turbines that run on natural gas.
- Importing gas in the short-term until Lebanon has sufficiently developed indigenous resources (solar, wind, gas, etc.) to meet the domestic demand.

The private sector has a big role to play, especially in supporting the shift towards renewable energies. Decentralization of power generation is a global trend and now is the time for Lebanon to take this option.

### **Current Government Plan**

Recently, Lebanon's government approved in principle a blueprint of a reform program, which includes some of the measures listed above. The IMF, with which Lebanon is discussing a potential bailout program, clearly indicated that preventing the energy sector's drain on public resources was a key pillar of the country's economic recovery. However, in the past few years two previous plans with similar goals have gone unimplemented due to political splits.

The latest program projects EDL breaking even by 2023 and turning profitable by 2024 by increasing bill collection, cutting technical losses and – only once electricity supply is increased to eight to ten hours per day – raising the price of electricity from around US¢1 per kWh to between US¢10 per kWh for most residential customers and US¢18 per kWh for others. It also calls for the appointment of an ERA (which was mandated by a 2002 law but never implemented due to political disagreements) and for an audit and eventual corporatization of EDL.

The program would extend the current three to four hours of power per day to eight to ten hours later this year via imports of electricity from Jordan and gas from Egypt. It would also add 500 megawatts (MW) of “temporary” generation to the grid in the midterm.

## Jordan and Egypt Gas Deals

In January Lebanon signed a deal to import electricity from Jordan through Syria. The deal is expected to supply Lebanon with two hours of power a day, double what is currently available from EDL. Electricity from Jordan will cost Lebanon about US\$200 million a year. The agreement is part of a wider plan to supply a power station in northern Lebanon with Egyptian gas via a pipeline that runs through Jordan and Syria. It is estimated that the proposed Jordanian electricity and Egyptian gas could provide around six hours of electricity per day.

Under a U.S.-backed plan, the proposed gas agreement with Egypt would allow Lebanon to secure an increase of 450 MW from the gas transported through Jordan and Syria. The deal was quickly designed as a response to the Iranian-backed Lebanese group Hezbollah, which made a deal with Iran last August 2021 to import gasoline and diesel from Iran. In our views this is a quick fix that does not address any of the sector's problems unless it is backed by additional reforms.

Prior to making this agreement effective, Egypt is expected to receive written assurance from the U.S. administration confirming that such a deal does not breach U.S. sanctions against Syria. The proposed agreement marks a major change in the region's policy towards Syria.

The World Bank is expected to finance Lebanon's purchase of power from both Jordan and Syria but has made the loan conditional on the fulfilment of certain reforms. Based on the political situation in the country, it is doubtful that the Lebanese government will put these reforms into effect before the parliamentary election in May.

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