

All of the Power

Lebanon's energy crisis has plagued the country for decades, and in the advent of the COVID19 crisis, the necessity of finding and enacting affordable and sustainable energy solutions has become drastically obvious. Since the start of the Lebanese Civil War, which occurred almost 50 years ago, the country has not once been able to support a full, uninterrupted 24 hours of electricity. In some regions, the state only runs electricity a measly 7 hours per day (Bianchi, 2019). Lebanese citizens have become as accustomed to constant power outages and additional hefty costs of running personal backup motors as they are to the black smog which hangs over Beirut.

The Coronavirus pandemic and its subsequent quarantine heavily reinforced how dire the problem is. With the entire country locked behind closed doors for months, at-home demand for electricity rose and, unsurprisingly, that demand was not capable of being met. This had serious repercussions, with countless students being unable to participate in online classes and multiple businesses adversely affected, most crucially small businesses which had already been battered down by the country's economic recession. These institutions, along with the rest of the world, found themselves suddenly and unprecedentedly dependent on having online capabilities. Lebanon's unstable energy infrastructure made this urgent virtualization incredibly difficult, if not impossible. The capacity to effectively transfer the country's economy and essential institutions online is something Lebanon should have begun to work on long ago, but whose necessity COVID19 has exacerbated.

The problem lies in Lebanon's inexplicable commitment to remain reliant upon outdated, heavily expensive fuel and diesel oils. The societal welfare loss which stems from such a decision cannot be overstated. The oils are processed in aged power plants whose average capacity remains 1,400 megawatts below the peak demand, wholly incapable of sustaining Lebanon's growing population. The consequential electricity shortages, according to the World Bank, are the second leading detriment to conducting business in the country, leading to massive financial loss (McDowall, 2019). The additional costs Lebanese citizens incur in paying for backup generators is another weighty economic consequence. There are environmental ramifications to burning fuels due to the production of greenhouse gases which contribute to global warming and pollution. This comes at the cost of societal health in the form of worsened air quality: the WHO has deemed Lebanon's air quality level three times above what is considered hazardous (McDowall, 2019), and the respiratory diseases it breeds lead to avoidable healthcare costs and a weakened workforce. Lebanon's inefficient provision of electricity is a negative externality of production on almost every front, even without mentioning that fuel accounts for an enormous percentage of Lebanon's merchandise imports, contributing heavily to Lebanon's already exuberant trade deficit.

The solution for this debilitating problem is simple: Lebanon must make the switch to clean energy. The justifications and benefits of this are many. Lebanon is naturally blessed with an abundance of wind, water, and sun. Green energy in the form of wind energy, hydropower, and/or solar power is thus both easily attainable and highly sustainable. Lebanon has the potential to produce 5,400 megawatts of energy from wind power alone (Renewable Energy, 2019) which is thousands of megawatts above the country's peak demand. Hydropower and solar power retain equally impressive potentials. These are natural, renewable resources, meaning they can fully and environmentally-consciously meet the needs of the current generation all while ensuring future generations' needs may also be met. Moreover, they are hugely cost-efficient, particularly in comparison to the current

expenditure on oil and fuel. Whereas oil costs the state \$0.17/kilowatt, hydropower would cost only \$0.09, wind power \$0.07, and solar power only \$0.06 (Renewable Energy, 2019). By the last count, electrical subsidies were equivalent to about 40% of the country's debt (McDowall, 2019); as it is so vastly cheaper to produce, the government would save an exceptional amount of money by instead subsidizing clean energy. Factors of production for clean energy are found domestically, so Lebanon could cut back heavily on its imports and improve its trade deficit, all while creating much-needed jobs within the national clean energy sector. Finally, the considerable amount of money the government saves could then be used to benefit society through the subsidization of technology for small businesses and schools to aid them in their virtualization.

The most attractive aspect of this solution, however, lies not only in its sustainability and cost-effectiveness but also in the independence it may finally afford Lebanese citizens. As the state-provided electricity fails to meet demand, private generator owners have materialized to make up for lack of supply. These neighborhood suppliers, infamously known as "generator mafias", can afford the backup generators individual citizens often cannot. They profit off of the failures of the state and tend to heavily overcharge for their service. For far too long, Lebanese citizens have helplessly had to cut two checks for power, one to the government and another to their private supplier, and *still* are not provided with 24/7 electricity. If the government was to subsidize clean energy, the sector would flourish and develop healthy competition with affordable prices for citizens to buy solar panels, hydroelectric generators, and wind turbines of their own. Lebanese communities could finally break free of the toxic relationship they are forced to hold with these generator mafias, and power their homes and businesses independently and far less expensively.

Decades of unnecessarily inefficient, economically, and environmentally parasitic energy production is no longer acceptable, particularly in the face of viable, superior alternatives. In embracing renewable energy, Lebanon could kill multiple birds with one stone: ridding themselves of an enormously costly energy shortage issue, finally sustaining their citizens' power needs, saving a significant amount of money, creating jobs, and helping guide their country into a new, online era. Lebanese communities could also finally gain independence and control over their homes and businesses so that an ineffective government and exploitative private sector would finally not hold all of the power.

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