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Liberia, Low Access to Electricity  
**Low Energy Access in Liberia**

Only 1.24% of Liberia's population had access to stable electricity and energy in 2008, and even now, in modern day, only 26% of the population does ("Access to Electricity", 2018). While this is heading in the right direction, it is not enough to give respite to the grave situation and crisis that Liberia lies in today. In order to improve the quality of life for more of its people, Liberia should invest more in renewable energy sources, specifically its development of offshore wind farms, hydropower plants, and personal forms of solar power systems and devices, as a potential solution to their energy problems for both its rural and urban populations.

Liberia has a large rural population compared to its urban population, but both urban and rural citizens have little access to electricity or a stable energy source. This is also influenced by the fact that Liberian civil wars and fighting destroyed or damaged many urban areas and infrastructures. According to a case study on urban growth in Monrovia, Liberia's capital, "Combined with extensive war damage, Monrovia faces the daunting challenge of rebuilding at the same time as extending its urban infrastructure" (*Case*, n.d.). This means that even less of the country's population, even in urban city centers, does not have access to electricity due to the damages. Because Liberia is still recovering from the effects of the civil war, which ended in 2003, it has become difficult to restore the framework of the city fast enough in order to keep up with the rapidly growing needs of its citizens. In addition, Liberia was also a focal point of the Ebola Epidemic in 2014, worsening the tension within the country. All of these facts are confirmed by Action Against Hunger when they state:

Because of the country's low agricultural production and poor household incomes, Liberia has suffered from chronic food insecurity since the civil war. Healthcare systems are also struggling to recover and the Ebola epidemic of 2014 proved that the system was still too weak. Chronic malnutrition at 32 percent is among the highest in the world. Finally, a decline in funding has reduced NGO resources, slowing down the country's recovery. ("Liberia", n.d.)

The gap between the growth of the city's needs and the progress of the rebuilding and recovery efforts has caused Liberia's urban areas, even Monrovia, to form a deficiency of electricity access, and other essential needs and resources as a result. According to 2020 data from the "Liberia: Power Africa" fact sheet (2020), "In the capital city of Monrovia, less than 20% of the population has access to electricity." These statistics further demonstrate how little of the population in Liberia has access to electricity. This percentage would be even smaller for the population in rural Liberia. The fact that Monrovia is the capital of Liberia, yet is still impacted so severely by the energy crisis, puts the gravity of the situation into perspective. According to one article, "Liberia, on the Atlantic coast of Africa, is classified as a least developed, low-income, food-deficit country. It ranks 176 out of 189 countries in the 2019 Human Development Index" (World Food Programme, n.d.). This really puts into perspective how dire the conditions in Liberia are. In short, the energy crisis in Liberia is present throughout, in both rural and urban areas alike, with both groups impacted in many severe and different ways.

The lack of stable energy access in Liberia impacts a multitude of developmental issues and the overall quality of life. According to The World Bank, “One billion people...live their daily lives without electricity. This represents a fundamental barrier to progress for a sizable proportion of the world’s population, and has impacts on a wide range of development indicators.” (“Access to Energy”, 2018). This idea, from a feature story on world electricity access, supports that the need for stable access to electricity impacts a country’s ability to support modern development. The lack of electricity in Liberia limits its capacity to improve education, health, poverty, and more. According to the organization Action Against Hunger:

Currently, 38.4% of the population is food insecure, 25% of the population does not have access to drinking water, and just 17% have access to basic health services. Although HIV and Ebola prevalence rates have declined, diarrheal diseases remain the second largest cause of death for children under five. (“Liberia”, n.d.)

This shows that Liberia is still very far from reaching a comfortable standard of living for its population. The unavailability of energy sources and electricity is a factor that makes improving those statistics very difficult. Also, if a lack of electricity is prevalent, jobs and schools are limited to work only during daylight hours. In addition, food security is impacted as food cannot be refrigerated or frozen, which also impacts its ability to be transported and make its way to those who need it most. This most negatively affects those in more urban populations, because they rely on food transportation and distribution networks, as opposed to the rural population, who are able to grow their own food for the most part. On the other hand, the collapse of the Liberian infrastructure limits the ability of those farmers to sell to and access the market, contributing to the continuous rise of poverty in Liberia. According to Lenartt Dodoo from Front Page Africa on the World Bank 2020 forecast, “The [World Bank] report notes that the share of households living below the national poverty line is projected to rise to 65.2 percent in 2020 under the baseline scenario and to 68.9 percent under the (moderate) downside scenario” (2020). This statistic shows how severe the economic crisis is developing alongside the multitude of other issues in Liberia. Along with the infrastructure collapse, the economy and other important networks were damaged and thus slowed down Liberia’s development further. Without electricity, it is much more difficult to achieve any progress in those areas as well. These points are also supported by Peters & Sievert (n.d.) when they state, “A lack of access to electricity hampers development. It affects everything from people’s ability to learn to the creation of enterprises and the provision of public services like health care.” Clearly, a lack of access to electricity can negatively impact the daily lives of many. It hinders the development in modern advancements that are needed in order to aid countries in becoming developed. Both ideas support that improvements in access to electricity is needed to accelerate progress in developing countries, and that directly relates to the United Nations’ Sustainable Development Goal 7, “Ensure access to affordable, reliable, sustainable, and modern energy for all” (*#Envision2030*, n.d.). Therefore, the shortfall of electricity access in developing countries, including Liberia, negatively impacts the development of the country, its ability to grow further and adapt to an increasing population, and the overall quality of life of its citizens.

The Liberian energy crisis and its resulting effects could be improved by the introduction of more offshore wind energy investments and developments. Many other developing countries have taken big steps towards this. According to an article by Science in the News, “[Energy Service Companies, or ESCOs] are contracted to energy users to identify energy savings projects, and are then paid from the energy savings that come from the financed projects” (“Encouraging Sustainable”, 2012). This shows one

way developing countries can obtain clean and renewable energy for themselves. It is being proven time and time again that developing countries can find ways to access clean energy in order to assist the process of development, thus raising the quality of life of its citizens. Liberia can also learn from these examples to improve on its ability to grow in renewable energy production. Recently, Liberia has been taking from some of these examples, and has been rebuilding its infrastructure with the potential of renewable energy in mind. Although it would be more difficult for Liberia to reach rural populations with renewable energy, urban areas could benefit from it greatly, and eventually Liberia could work on extending the reach of renewable energy to rural areas as well. According to a Britannica article, “There is vast potential for the development of hydroelectric power, as virtually all of Liberia’s installed hydroelectric capacity was damaged or destroyed as a result of the civil war” (Pettersen & Jones, 2020). By capitalizing on these opportunities, Liberia could greatly increase its energy production. In fact, Liberia has already begun work on these projects, and according to an article by The World Bank, “The Liberia Renewable Energy Access Project (LIRENAP) seeks to establish a mini hydropower plant to benefit about 50,000 people ... The project would also benefit an additional 100,000 people nationwide who would gain access to stand-alone solar systems and lanterns” (“New Energy”, 2016). LIRENAP is a great example of a project in progress by Liberia because it takes advantage of salvageable groundwork, which makes it easier to build new infrastructure that can support the needs of Liberia’s growing population. All of these projects and efforts are helping with lack of electricity access, but another renewable energy source that has potential in Liberia is offshore wind power. Although offshore wind power is not the perfect solution to Liberia’s growing need for stable electricity access, it is something that should be capitalized on further than it is now. According to Renewables Liberia, “Offshore wind is steadier and stronger than on land, and offshore farms have less visual impact, but construction and maintenance costs are considerably higher” (*Wind Energy*, n.d.). Unlike the hydroelectric power that Liberia has been focusing on, offshore wind has separate strengths that could build onto the strengths of the hydroelectric plants already in development and use. The main downside and obstacle of offshore wind would be preliminary funding and costs. It would be difficult to provide funding for offshore wind projects, but it could be done, especially with foreign aid, such as the example model used above. Liberia could also look towards world leaders in offshore wind power capacity, like the United Kingdom, which has the highest offshore wind power capacity in the world (Sönnichsen, 2019). The benefits of establishing offshore wind farms, putting aside funding issues, would be reduced land usage, higher wind speeds than land-based wind farms, and more stable wind speeds overall. In summary, growth in the offshore wind power industry in Liberia would improve electricity access and thus assist with the development of the country as a whole.

In addition to capitalizing on the opportunity of off-shore wind energy, Liberia could also promote and invest in the use and production of smaller-scale solar power sources, such as solar lanterns. Some of the problems that the energy crisis creates could be lessened with the help of these smaller-scaled productions. For example, solar panels could perhaps generate and store enough electricity during the day to power lights and other appliances in the homes of people who lack access to electricity. It could also help solve the problem of jobs and schools only being able to operate during daylight hours. Currently, many Africans, including Liberians, have to use dirty, expensive kerosene as fuel. They may also have to turn to lighting fires during the night for light or warmth, which is exceedingly dangerous. According to an article by Power Africa, with a solar lantern, someone without access to electricity can safely: read at night, walk home safely after dark, keep predators away from livestock after dark, go to the toilet in the

middle of the night, fix their bicycle, motorcycle, or car when it breaks down at night, go fishing, play with friends at night, and more (Herscowitz, 2018). This shows the diversity and power of a single small-scale solar device. Another example of the use of solar lanterns is shown by BrightLife, when they explain, “The project identifies a selection of schools in peri-urban and rural areas that have little or no access to electricity and retrofits them to house 100 solar lamps per school. ...students in selected schools will be able to use lamps on campus and have the option to also take them home for evening study” (“Solar Lamp Library, 2019). This idea of a small-scale solar powered device does not have to be limited to just solar lanterns, of course. Solar energy can power stoves and other appliances in a Liberian household in order to improve the quality of life. Liberia can also improve its healthcare system and general infrastructure with access to more readily available emergency sources of electricity. Another great opportunity that these solar powered devices present is a way for the rural population of Liberia to gain a form of energy access, thus covering a weakness of the offshore wind energy solution. Since these solar devices are more individual, and do not require much interconnected infrastructure, it is more easily used by rural communities, so it supports and supplements the other efforts to rebuild urban areas as well. This is supported in an article by BrightLife about the use of solar lamps for schools when it says:

Rural areas are the least connected to the electrical grid, yet their schools and students must compete for results with their more connected urban counterparts. For those lucky to be on-grid, the electricity is often unreliable and expensive, while few alternatives exist. Countries like Uganda have committed to improving educational access and outcomes for all children, but grid and other infrastructural constraints continue to pose the biggest handicap to rural schools. (“Solar Lamp Library”, 2019)

Liberia would most likely need some sort of aid in obtaining the solar devices, but there are already many examples of this in other African countries. Companies like SolarAid, for example, are working on providing as many solar lamps to communities in need in Africa (“About SolarAid”, n.d.). These companies need more support internationally both from other countries and other donors, because they can make a lasting impact for the countries and people in need. Small scale solar powered devices may also just be the start of Liberia’s use of solar energy. With enough funding, larger projects can be initiated. For now, an increase in the amount of attention smaller-scale solar power systems and devices would help solve the problem of a lack of energy access for many people. Rural communities could benefit the most from this, as other efforts made by Liberia’s government to rebuild and recover from the effects of the recent civil war and 2014 Ebola Epidemic will most likely focus on more urban areas first, like Monrovia. It is also a less financially demanding project upfront to work on for Liberia, as opposed to the more coordination-demanding offshore wind and hydropower projects. In short, small-scale solar energy systems and devices are a fantastic way for Liberia to reach it’s more rural populations and provide them with a way to access clean energy and electricity.

By investing more in the development, production, and distribution of offshore wind energy and small-scale solar power sources, Liberia could increase the quality of life of its citizens and develop further. Currently, a very low percentage of the country’s population has access to electricity or any form of energy, whether they are in a rural or urban setting. This has affected the country’s living standards greatly, such causing widespread food insecurity, poverty, and more. By spreading awareness of the Liberian energy crisis, and the opportunity that renewable energy sources present, it is possible to improve the quality of life for many people in need in Liberia and many other struggling countries around the world.

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