

A Compelling Case for Solar Energy

By bmpUnited

The solar revolution is upon us, and I am here to tell the story. The challenge is that I do not know where to start or end. The information is everywhere; all you need to do is look. The most concentrated and easy to find repository of information on Solar is the internet, especially YouTube. People everywhere are eager and excited to share what they know about solar: how to harness it, how to consume it and how to repair and maintain its components. In fact, there is so much information on the internet and YouTube about solar that one need not go elsewhere for information or training. And it is all free; once you have an internet service, desktop, laptop, tablet or just a smartphone.

I have also caught the solar fever and I am eager to discuss solar with everybody, anywhere and anytime. So, please allow me to share my perspective, and then as you do your own research you can tell me what you agree with or disagree with.

Here are my observations and predictions:

1. I correctly predicted the digital revolution which started in the late 60s, although I only found out about it when I arrived to the United States in the late 70s, and had the opportunity to work with computers for the first time. This discovery made me abandon a dream to study medicine, or to work on a PhD in Economics as my professors recommended. Instead, I went for a master's degree in Computer Science. Although I did not get as rich as Bill Gates, my choice of a Computer Science career made me never to look for work ever, even now that I am so old.

This is exactly the way I feel about Solar, especially in Africa where the lack of reliable electricity has stifled economic growth and the Gross Domestic Product (GDP) for most African countries, with, perhaps, the exception of South Africa.

2. The current electricity model is unsustainable for many reasons, especially in Nigeria. Nigeria's current electricity comes mostly from fossil fuels, with a smaller percentage coming from hydroelectric sources. Even the hydroelectric sources are diminished during the dry season. Because of climate change and global warming, fossil fuels will need to be phased out sooner or later. Fossil fuels are unsustainable long-term worldwide.
3. The Nigerian electric grid is structurally unsound and has broken down frequently causing random and erratic power outages nationwide.
4. About 40% of power generated in Nigeria are suspected to be lost during transmission and through widespread electricity theft. Losing 40% of all electricity generated makes Nigeria's electricity permanently expensive and one of the most expensive. That may explain why many Nigerians cannot afford current grid electricity as currently produced and distributed.

Hence, the current Nigerian electricity grid solution may not be the answer, although it cannot be shut down completely.

In contrast with solar. Nigeria is close to the equator and has an abundance of sunlight almost year-round. An average of 3 hours of sunshine per day in the year is all that is needed to make solar viable. Most parts of Nigeria, and indeed Africa exceed this minimum amount of sunshine. Sunlight is also FREE.

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Although the SUN is free, it is not free to harness it, store it for use when the sun goes down, and finally convert it for consumption, from Direct Current (DC) to Alternating Current (AC). As of first quarter of 2020, the real cost of consuming energy from the sun is still artificially high. This is not unusual. Most technologies start out being very expensive. However, the cost goes down as populations wake up to the new technology and unleash a momentum that quickly drives costs down. Despite the present high cost of enjoying electricity from solar energy, it is no time to sit on the fence. Everyone must jump in and become part of the economic momentum and cost dynamics that are guaranteed to bring costs down. Rather than being an impediment, the current high cost of installing solar energy should be an incentive to address the sources of the high costs. For example, government officials can lobby and remove all tariffs imposed on solar products; business men and engineers can seek manufacturing licenses to produce solar products locally; banks and other financial brokers can help overcome the financial hurdles of buying solar products; government can partner with banks to offer low interest loans to solar electricity customers. These recommendations are sound business initiatives because ultimately the cost of solar will be significantly lower than the cost of Nigeria's grid electricity, or the cost of operating fossil-fuel driven and noisy generators.

All the above will help bring the cost of solar down. With regular un-interrupted power supply, the productivity of individuals and the entire economy will improve, raising Nigeria's GDP or Gross Domestic Product through a ripple effect, sometimes referred to as the multiplier effect by economists.

The extended market emanating from solar-based electricity is huge. Consider the following markets:

1. Market to buy and sell photo-voltaic (PV) solar panels, solar batteries, inverters, charge controllers and specialized solar energy accessories, such as circuit breakers
2. Market to repair broken inverters and charge controllers
3. Market to install off-grid solar, mini-grid solar and other configurations of solar in-between.
4. Market to fix errors and mistakes made by novice installation engineers that are still learning
5. Market to maintain the installed solar base. Solar panels and battery heads must be cleaned every 3 - 6 months to continue to produce at optimal levels. Without maintenance, the solar lights will eventually shut down.
6. Market to reach every home in Nigeria and Africa that is not currently served, or are underserved. Electric power is almost like food. Everyone wants to get some.
7. Market to start securing licenses to locally manufacture solar panels, batteries, inverters, charge controllers and other specialized solar accessories
8. Market to provide financing to enable individuals and families overcome the initial cost of acquiring solar electric.
9. Market to provide standards and quality control to ensure that solar components are of good quality before installation.

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Action items to consider during this silent solar revolution:

1. Get some training either through personal research or formal training to understand the business.
2. Watch YouTube videos on solar; you will be amazed how much you can find and learn.
3. Consider building an installation team by gathering some young people that need work and train them; solar technology is not rocket science.
4. Attempt to build your own off-grid electricity; it will be significantly less expensive than your current grid electricity and generators in the long run
5. If you have contacts in countries that have established big footprints in solar, you may consider the manufacturing side of the business. Some countries to keep in mind are: China, Japan, Germany, India, Italy, France and South Korea.

Warning – You may find resistance from individuals, organizations or even government that oppose solar technology and seek to maintain the status quo by keeping the noisy and polluting generators running. This is akin to fighting to retain typewriters in the computer era or maintaining physical road maps while electronic navigators abound. Not everyone wins when change happens.