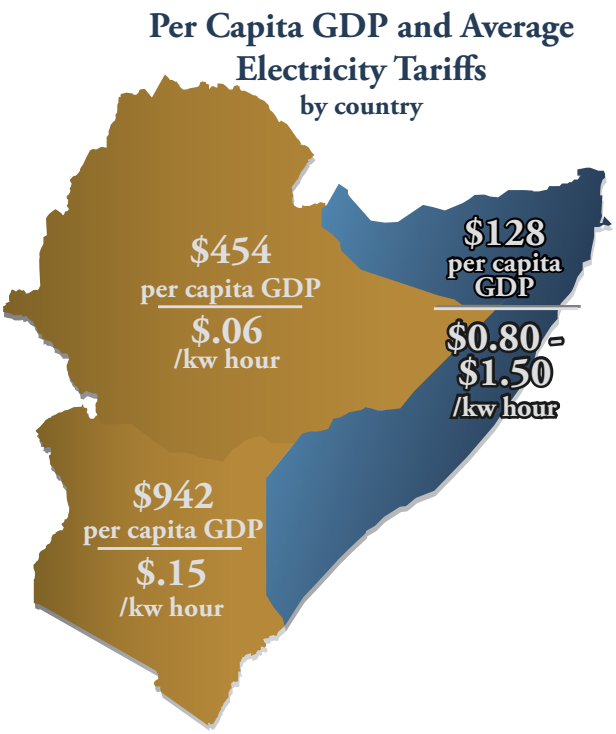
# Powering Progress:
# The Potential of Renewable Energy in Somalia

by Jami Nelson Nuñez

***One of the most critical issues for economic growth and stability in Somalia is affordable access to electricity. This policy brief highlights the work of Somalis to introduce renewable energy solutions to their country. It offers suggestions for entrepreneurs, investors, civil society, and governments to help Somalis achieve affordable, reliable, and efficient energy from renewables.***

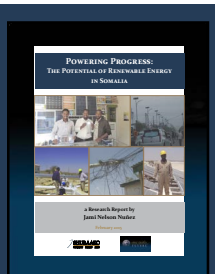
## The Affordable Energy Deficit in Somalia

The 2014 African Energy Outlook estimates that fewer than a quarter of Somalis have access to electricity. For those with access, electricity tariffs are among the highest in the world, varying from $0.80 to $1.50 per kilowatt hour, while their neighbors living in Ethiopia and Kenya pay less than $0.20.




Because municipal grids were destroyed during the civil war or fell into disrepair, private electricity providers set up their own generation and distribution grids. Many of these private providers lack technical training and operate highly inefficient systems, typically using refurbished diesel generators, leading to substantial losses of energy in distribution – as high as 40%. The fragmented sector cannot achieve efficiencies of scale. Moreover, the distribution grids are dangerous and have led to the electrocution of electricity workers and bystanders.

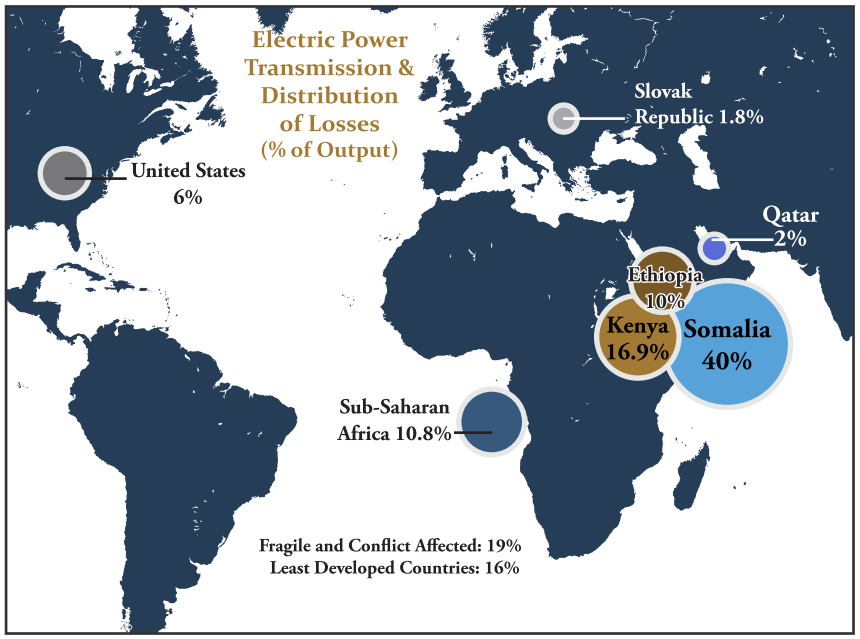
The Somaliland government estimates that more than 100,000 liters of high-polluting diesel fuel is burned daily in Somaliland alone. The cost of fuel eats up around 60-65% of power providers' revenues, making it difficult to sustain a profit or to invest in more efficient energy systems. The situation is worsening with the rising price of diesel, which has quadrupled since 2002.



This policy brief summarizes a research report by the One Earth Future Foundation, "Powering Progress: The Potential of Renewable Energy in Somalia."
This report is available at www.shuraako.org/publications

The lack of access and high tariffs create the following social, environmental, and financial problems:

- **Economic constraints**: The high cost of electricity devours Somali business margins and makes it hard for local goods to compete with imports. High tariffs and unreliable services have hampered businesses' operations, forcing them to cut back on production and to consider relocating to neighboring countries, like Ethiopia.




*Source data: International Energy Agency*

- **Damage to the environment:** Without affordable electricity, Somalis use charcoal for cooking and heating. As a result, an estimated 2 million bags of charcoal are consumed in Somalia each year, contributing to the devastation of local forests. Domestic charcoal consumption and illegal exports of charcoal have reduced forest cover in Somalia from an estimated 60% in 1985 to 10% in 2001.

- **Strains on effective service provision:** Electricity is essential for most services that are critical for a well-functioning modern society. Currently in Somalia, only half of the few clinics that are capable of conducting surgeries have access to electricity and those that do pay very high premiums and experience power outages, sometimes in the middle of surgeries.

## The Opportunity of Renewable Energy

No investment in Somalia could pay the social, environmental, and economic dividends that improvements in electricity services can pay. In other countries, affordable electricity has increased agricultural and manufacturing productivity and created opportunities for the emergence of new businesses. Access to affordable, reliable electricity improves critical public services and can increase household incomes by reducing time and money directed at procuring cooking fuels. Affordable electricity could help save Somalia's endangered forests and improve its air quality.

Renewable energy sources are a viable and immediate way to increase affordable energy for Somalis. Investments in renewable energy are multiplying in Africa as the costs of renewable technologies decrease. According to the Renewable Energy Policy Network for the 21st Century, investments in renewable energy in 2012 and 2013 were greater than the previous eight years combined for Africa and the Middle East.

Somalia has one of the highest potentials for onshore wind power in Africa and one of the highest rates of daily total solar radiation in the world. The cost of renewable energy options are decreasing and are now often less expensive than diesel options.

The following conditions have primed the energy sector for investments in renewable energy:

- **A strong private sector:** Private investment and entrepreneurism have fueled development in Somalia. The lack of state control of the energy sector allows Somalia to avoid the painful step of unbundling state monopolies on energy that many other countries have faced.

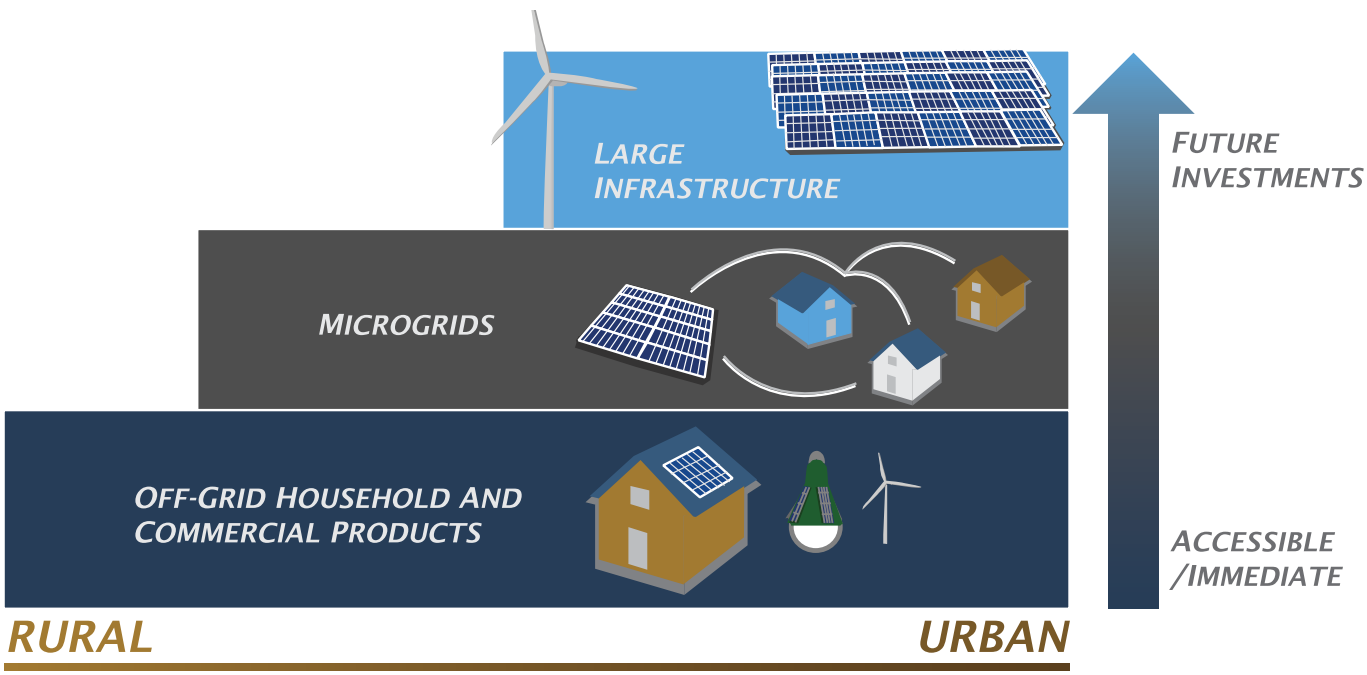
- **Growing demand and a track record of success:** In the last four years, there has been an expansion of renewable energy investment—from small, standalone solar products like solar lightbulbs to renewable

energy generation for minigrids. Over 20 renewable energy projects have been constructed in Somalia in the last three years. These projects, such as a 60 kW wind farm in Oog that has brought 24-hour electricity to the city, show the feasibility of renewable energy and stimulate demand for renewable energy solutions.

- **Dynamic local partners:** Several renewable energy companies have established themselves in the past four years throughout the country. These companies can provide local support and expertise that continues to grow with each renewable energy project.
- **Progress in the electricity sector:** The market of private energy provision has begun to consolidate in many cities, paving the way for more economies of scale. Feasibility studies to revamp and synchronize selected cities' grids, particularly in the north, are underway.
- **Greater government support:** Regional Somali governments have voiced strong interest in renewable energy. Investment in renewable energy is a top priority in several key planning documents for the Federal Somali Government, the government of Somaliland, and the government of Puntland. Somaliland has created a regional energy policy and drafted laws and regulations for the energy sector that are currently under consideration.

## Four Key steps to move Renewable Energy forward

1. **Building stronger governance to pave the way for more investment:** The most pressing problem for the electricity sector and investment in renewable energy is the lack of legal frameworks and governance.
    - **Laws and regulations** can reduce investment risks, create safety standards, and promote efficiency. Somaliland, with help of donor organizations, has developed an energy policy and facilitated a series of policy dialogues that enhanced communication between independent power producers and the government. Passing the Somaliland Energy Act is vital to attract investment, as will be similar laws for Puntland and South Central Somalia.
    - **Creating a secretariat of stakeholders in the energy sector** to identify long-term goals such as participating in cross-border power pools can help develop a strategy to deliver a master planned system. These would help clarify horizons for investment and increase interest in investing in the sector.



2. **Building technical capacity:** While there is a growing base of renewable energy expertise, the need for technical experts in Somalia remains. The lack of expertise has led to troublesome lag times in erecting and servicing renewable energy systems. Creating a renewable energy training program in partnership with existing renewable energy organizations would address this deficit. Trainees could learn the skills while gaining hands-on experience.

3. **Starting small:** As opposed to large infrastructure projects that pose higher risks, smaller approaches are more versatile, robust, and likely to succeed. They represent a viable bottom-up approach, building a foundation for the country that is compatible with a long-term, energy efficient landscape.

*Shuraako, Golis Energy Household and Commercial Products*

- **Off-grid renewable** household and commercial products, such as solar lightbulbs and solar photovoltaic panels that power households or buildings without connecting to grids, represent a largely untapped market. Financing options are needed to help lessen initial capital costs. Supporting credit options through local financial institutions or renewable energy companies represent a lucrative investment with social dividends. For example, when Golis Energy began offering a credit system for clients their sales increased by 40% within the first few months.

- **Renewable energy based microgrids** are one of the best ways to make tangible progress in the short term. Microgrids can electrify both remote towns and urban environments as they can operate in isolation or connect to other grids. Financial instruments to help independent power providers and towns distribute initial capital costs over time can be both lucrative for investors and helpful in building momentum for renewable energy.

4. **Laying the groundwork for larger renewable infrastructure projects**: There are several steps necessary to attract investors to large renewable energy infrastructure projects. In addition to creating laws and regulations, and increasing technical capacity, Somalis must ensure transparent decision making and competitive bidding in public-private partnerships. Feasibility studies on how best to improve distribution grids and integrate renewable resources are also needed. Laying the groundwork will allow Somalis to jumpstart projects when sizeable infrastructure investments become possible.

## Conclusion

The durability and strength of the Somali recovery depends on securing the basic infrastructure, such as affordable electricity services. Investments in renewable energy can dramatically improve Somalis' access to electricity. The growing number of renewable energy projects demonstrates the viability of investments in renewable energy. As the overall Somali economy develops, more companies and households will need access to electricity, which underscores the potential of the market. Addressing the challenges that constrain the energy sector, such as lack of policies and regulation as well as deficiencies in technical capacity, are onerous tasks but such efforts will facilitate investment and promote economic growth and good governance



Cover: *Beder Power Company in Oog- photo by Max Arte Solar energy in Puntland - photo by Lee Sorensen*