



Proposed Energy Plan for
Maryland County, Liberia

Introduction

For any community to grow in today's world there must be energy to power its industrial and economic infrastructure. The Maryland Development Agenda (MDA), commissioned by the Liberian NGO, *Marylanders for Progress (Liberia) Inc.*, outlined the need for use of solar energy for schools, clinics and the JJ Dossen Memorial Hospital. This paper provides suggestions for the use of solar energy not only in Maryland County but also in communities throughout Liberia by applying the tested model that is being practiced in India to provide the rural population with electricity. In partnership with the Bishop S.D. Ferguson Foundation, it is our hope that additional resources and support will come from the Government of Liberia, India, the United Nations and the USAID to make the solar energy project a reality.

Solar Energy

Using the Barefoot approach, it is our intent to provide adequate training to people who will install and maintain solar panels and solar lanterns in schools, clinics and homes in their communities. The Barefoot approach has been tried and tested as an effective method for rural electrification. The Barefoot University in India educates women with minimum formal education to become solar energy engineers. The objective is for each village to be self sustainable with solar electricity.

Each village will select a person (woman or man) to undergo training in solar energy equipment installation and maintenance. Once the trainer(s) returns to the village, he/she will create an enterprise that will maintain the solar panels, repair lanterns and take care of the solar-powered water pumps for the village. The trainer will be the installer, maintainer and enterprise owner. The ownership of the solar electrification project will be the community which will make the decisions and commitment to maintain the system.

MFP intends to implement the solar energy concepts in Liberia in the following ways: -

1. **Community Electrification:** Utilize the Barefoot approach for four pilot projects in selected villages in the four Districts of Maryland County and provide solar cookers to communities in order to effect change in behavior from the current use of fire coal and wood burning.
2. **JJ Dossen Hospital Electrification:** Solar panels will provide electricity that will support (a) Drugs and medical supplies storage rooms, (b) provide air conditioning. (c) Maintain proper temperatures in the morgues, (d) power water pumps to supply water throughout the hospital (e) supply energy to medical equipment such as incubators, x-ray and oxygen machines. (f) Provide general illumination and fans in the rooms.
3. **Barrobo, Karluway and Pleebo-Sodoken Districts health facilities Electrification:** These clinics need solar energy for basic illumination, power for water pumps, sterilizations and air conditioning for the drugs and medical supplies storage rooms.

4. **Schools and nurseries in the four districts.** Solar panels provision for four nurseries and four high schools in each district. This will allow for operation of night schools to reduce the high illiteracy rate, computer training and a place for children to study.
5. Solar panels for four Libraries and resource center in the four Districts.

Implementation

In order to achieve the objectives of this project, the following organizations need to participate and provide support:

- A. **Government of Liberia:**
 - Grant approval for Marylanders for Progress to be the lead NGO for the coordination and implementation of the project. (ii)
 - Provide support through diplomatic channels by requesting assistance from the Government of India and USAID or UN.
- B. *Marylanders for Progress* as the lead NGO undertake to:
 - Provide the detail documentation for the Village ownership and prepare the communities for commitment to the Barefoot mythology;
 - Organize a Solar Electrification Workshop to educate the communities about solar electrification;
 - Assist the communities to determine a monthly charge that will be paid by users for the equipment and repairs;
 - Assist the communities with the establishment of a democratic management to own and control of the solar energy equipment;
 - Assist the communities with the selection process for the persons (women & men) to be train as trainers for the project in India.
- C. *Lights for Africa* NGO will undertake assessments of schools and clinics to determine the number of solar panels needed at each site. It will also assist in the installation of solar panels.
- D. *The Bishop S.D Ferguson* Foundation will assist with funding for the initial stages of these projects.
- E. Additional support and assistance will be needed from UNDP and UNIDO which have supported similar projects in other West African countries.

Summary and Conclusion

The Government of Liberia White Paper on National Energy Sector recommends solar energy as one of the sources of electricity in Liberia. The recommendation is commercial and therefore will not be affordable to remote villages in Maryland County for many years to come. According to the white paper, the cost of providing grid power to customers who typically use less than 1 Kwh/day can be as high as USD\$1000-3000 per Kw of connected supply. This will not be affordable to the people of Maryland County.

The Barefoot approach to providing solar electrification to villages in Africa and South America entails the training of semi-illiterate people (women & men) to become Barefoot Solar Engineers. The cost for a 37 w solar panels unit is US\$425.00. The reusable lantern cost about \$100.00. The life of the fixed panels and lantern is about 10 years.

Communities agreed that each user could afford to pay CFA1000 per light in Mali and 500 Le in Sierra Leone each month. This is for 60 and 38 household respectively. The villagers own the solar panels and each household will own one or two lanterns. The panels and lanterns will be repaired and maintained by the solar engineers from the village and will be paid for by the villagers from agreed user fees.

With the approval and support of the Government of Liberia, MFP will lead this project to completion. This will provide energy to our people living far from Monrovia in counties where people must help themselves.