

Technical Walkthrough Of Sagbiebou, Togo, Africa

2011



Where do I begin?

One service Sunflower Solution's offers to our customers is the complete design of an emPower Plant™ solar power system based around our customers unique needs. We work closely with organizations to make sure the size of the emPower Plant™ is just right. This takes a little extra time, but the benefit is a complete solution that you can be confident will work, and the benefit of knowing you have not paid for more than you need.

At Sunflower Solutions, we often get two questions: "What is the average size" and "What does it cost?" Because we work with each customer on a per-project basis; unfortunately, there is no single answer to these questions.

Before we can accurately design and size a complete solar power system, we first need each customer to answer several key questions:

- What are your goals for having power?
- What will you be powering? (Be specific)
- How much electricity will each item use? (For example, are you using 10 watt light bulbs or 60 watt?)
- How many hours each day will each item need power?
- How many hours does each item need to run at night?
- How many days worth of backup power storage do you need?

The more detailed your answers to these questions, the better the information we will use to design your emPower Plant™.

Our Work in Togo, Africa

If you haven't read Bernie Smith's case story about his great work in Togo, download it from our website at www.thesunflowersolutions.com, and learn about his great work! We will use Bernie's process to show you how easy it can be to implement your very own



Twelve batteries hold electricity for the Bible Institute.



Batteries rest in this building built by Bernie and friends.

Location: [Sagbiebou, Togo, Africa](#)

Organization: [Assemblies of God World Missions](#)

Scope of Project: [Powering the Bible Institute at Sagbiebou, Togo](#)

Products Used: [Sunflower Solutions' emPower Plant™ Solar Power System](#)

Website: www.thesunflowersolutions.com

Contact: [Christopher Clark](#)

emPower Plant™ solar power project anywhere in the world.

When Bernie contacted us at Sunflower Solutions, he wanted to bring light to a school through a variety of 70 different sized lights. Some of these lights would stay on for security, while others would be on for only four hours a day. In addition, most of this power would need to be supplied at night. In case of poor weather, Bernie wanted the school to have at least a day's worth of power storage.

Using this information (see the questions listed above) we at Sunflower Solutions designed and supplied Bernie a customized emPower Plant™ solar power solution for his needs. Instructions were included and Bernie's equipment was packaged together into a turnkey kit for him. In Bernie's case, Sunflower Solutions also provided the tools he needed to install his system. (If you would like Sunflower Solutions to include tools for your project, just let us know.)

Bernie had already coordinated a container to be loaded with his solar, as well as other supplies for his school, in a United States dock. Bernie's emPower Plant™ was shipped to this dock, his container was loaded, and then the container was shipped to Togo.

If you do not have your own shipping container like Bernie, do not worry. Sunflower Solutions can help you coordinate your own shipping.

While Bernie's emPower Plant™ was traveling, he reviewed Sunflower Solution's Facebook Photo-Instruction album showing step-by-step pictures on how to install the emPower Plant™. He even made his own booklet to review the instructions until he was comfortable with the process before his emPower Plant™ had arrived!

When Bernie's emPower Plant™ arrived at his school in Togo, he only needed to supply a shovel,



The emPower Plant™ in Togo.

concrete and a local electrician to finish the electrical connection from his emPower Plant™ to his school.

The installation process for the emPower Plant is as simple as solar power can get, no technical expertise, prior training or specialized tools are required. During the last several steps, where electrical connections are required, Bernie borrowed a local friend with electrical experience for an afternoon and was able to finish the process.

After the emPower Plant™ is installed and running, very little ongoing maintenance is required, that is the beauty of solar power! The solar panels should be kept clean and free of dust and debris to prevent a loss in power. The connections throughout the system should also be regularly checked and tightened if loose, or replaced if damaged.

Bernie's Technical Specifications

Installed Watts	1400	Watts
Generation	14	kWh
Storage	32.4	kWh
Inverter Capacity	4500	Watts
DC Voltage	48	Volts
AC Voltage	230	Volts
Hertz	50	Hertz
Charging Amps	60	Amps