



African Solar Success Series

John Campbell Brings Water to Waterloo

In 2010, when John Campbell and his family first moved to Waterloo, a rural community located in Sierra Leone, West Africa, they had no access to clean drinking water. Even today, this is not uncommon for Sierra Leone—according to a report from the World Health Organization’s African Health Observatory, only 46 percent of people living in rural areas have access to safe water.

Campbell, who originally came to Sierra Leone as a Christian missionary, saw an opportunity to make a difference. When he first arrived in the country, he worked for several years with a charitable foundation named Water 4 to establish a well-drilling business using manual borehole drilling technology that he developed. Campbell would spend weeks at a time in the bush with the well-drilling crew, eventually installing over 300 boreholes across the country. This field experience, coupled with a degree in mechanical engineering from Northern Arizona University, prepared Campbell for his next venture—providing filtered water to rural communities using simple solar water pumping systems.



Campbell’s plan was to build community water-pumping stations, run by solar power, which would provide neighborhoods with access to filtered water. Working with the support of Willamette Medical Teams, Campbell has currently established three water pumping stations in neighborhoods around Waterloo. Willamette Medical Teams is a sub-group of Willamette International, a not-for-profit organization focused on providing medical care in Africa and South America.

The solar pumping systems are unique in several ways. Each submersible pump is powered by an

800-watt array and 200-amp hour 24-volt batteries, extracting water from the ground using energy from the sun. This water then goes through an intense filtration process, which includes UV radiation and a chlorine treatment prior to being distributed. The filtration not only seriously reduces the possibility of deadly bacterial infections, but also wards off any bacteria the water may come in contact with once it leaves the pipe.



Aside from the obvious health benefits, Campbell’s water



pumping stations are creating a market for sustainable, filtered water in Waterloo. Campbell sells his water at 10 percent the cost of packaged water, employing local youth to run the pump stations year-round. His long-term goal is to take over the water services for all of Waterloo.

Despite Sierra Leone's troubled past, the country appears to be moving in only one direction now—forward. And with people like John Campbell spearheading the push towards renewable resource management and urban development, the future is bright.

