

We Care Solar

wecaresolar.org

Dr. Laura Stachel and Hal Aronson combined their skills in medicine and solar energy to create We Care Solar (WCS) in 2010. As a former obstetrician-gynecologist conducting public health research in a Nigerian hospital, Laura was stunned to see how the lack of reliable electricity contributed to maternal-newborn mortality. Hal had taught renewable energy in California for more than 13 years. He co-created Solar Schoolhouse, bringing solar curriculum to California schools, and also created California Youth Energy Services, a service learning program. When Hal designed a rugged solar-electric system for Laura's Nigerian colleagues, it transformed emergency obstetric care.

No woman should die giving life. But every year, 300,000 women and more than 1 million newborns die from pregnancy and childbirth complications. In hundreds of thousands of health centers lacking reliable electricity, midwives and doctors struggle to provide critical care in near-darkness, leaving health workers unable to detect life-threatening conditions or provide critical services. The consequences are tragic.

WCS makes solar power simple and accessible to clinicians. Their innovative Solar Suitcase, a complete solar-electric kit designed to meet the needs of health workers in under-resourced health facilities, was conceived by founders Hal and Laura. It includes medical lights, rechargeable headlamps, phone chargers, and a fetal heart-rate monitor

Courtesy We Care Solar (2)



Left: This midwife from Malawi now has clean, reliable solar electricity for lighting, phone charging, and fetal monitoring. Below: Women Solar Ambassadors lead solar installation trainings for Solar Suitcase programs.



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to detect distress. With these devices, health workers report reductions in maternal and newborn mortality. Bright medical lights combined with solar power for medical equipment give health workers "the power to save lives."

Recent Projects & Programs

In 2018, WCS conducted Solar Suitcase programs in Uganda, Liberia, Tanzania, Nigeria, and Ethiopia. The programs include:

- Conducting needs assessments to identify health centers in need of reliable electricity for childbirth
- Leading capacity-building workshops to train local technicians to install and maintain WCS technology
- Conducting installations in “last-mile” health centers and educating health workers to use WCS technology appropriately
- Monitoring and evaluating the impact of WCS programs

The work is collaborative; WCS partners with ministries of health, nongovernmental organizations, and United Nations agencies that are working to improve maternal and newborn health care in health centers without adequate equipment. By conducting training workshops, WCS builds local capacity in Solar Suitcase installation, operations, and maintenance. With this model, they have equipped more than 3,400 health centers with Solar Suitcases, trained 13,000 health workers, and improved obstetric care for an estimated 1.7 million mothers and their newborns.

On the Horizon

WCS’s “Light Every Birth” initiative calls upon governments and international partners to ensure that all pregnant women have access to reliable electricity and lighting for safer births. WCS started national initiatives in two countries—Liberia and Uganda—working with international NGOs, ministries of health, and UN agencies. Sierra Leone, Tanzania, and Zimbabwe are the sites of the next Solar Suitcase programs.

Courtesy We Care Solar



Solar Suitcases in Sierra Leone

In Sierra Leone, maternal mortality rates are among the highest in the world. One in 23 women are at risk for dying during their lifetime from pregnancy and childbirth complications. With only 10% of the country having access to electricity, health workers providing nighttime care are often forced to rely on candles, kerosene lanterns, and flashlights. Critical procedures may be postponed until daylight is available.

Even before the Ebola outbreak in 2014, WCS was working to distribute solar power to dozens of health facilities around the country and conducting solar installation trainings with local technicians.

After Ebola, their work accelerated—more than 100 Solar Suitcases have reached “last-mile” (remote) clinics. This year, WCS is hoping to bring 100 more Solar Suitcases to health facilities in three districts of Sierra Leone, helping 10,000 mothers and babies in the next five years.

It costs approximately \$3,000 to light up a health center with a Solar Suitcase for five years and to train local technicians how to install and maintain these devices. WCS primarily relies on funding from grants and individual donations.

What’s in a Solar Suitcase?

PV modules: 40 W to 100 W; 12-volt

Charge controller: Morningstar ProStar, 15 A

Battery: Lithium ferrous phosphate

Lamps: Four; medical

The Solar Suitcase can be used as a mobile or permanent solar-electric system—the suitcase itself bolts to the wall and the modules can be mounted on a roof. An expansion kit provides additional lights for adjacent rooms.

“It is an out-of-the-box, plug-and-play experience. Someone who has never done anything with solar electricity can get the system running in less than a minute,” Aronson says. “If they choose to use it for a permanent installation, then it can be fully operational within two hours of opening the kit. It is that easy to use.”

“Health workers tell us they are no longer afraid to work at night, that they can do medical procedures with ease, that they can do the job they were trained to do,” Stachel says. “Surgeons tell us they can perform surgeries more efficiently and safely. And mothers no longer need to include candles and kerosene as part of their birthing kits.”

In Ethiopia, a newborn baby gets the gift of a well-lit, safe birth, thanks to the Solar Suitcase.