



GLOBAL HOSPITAL

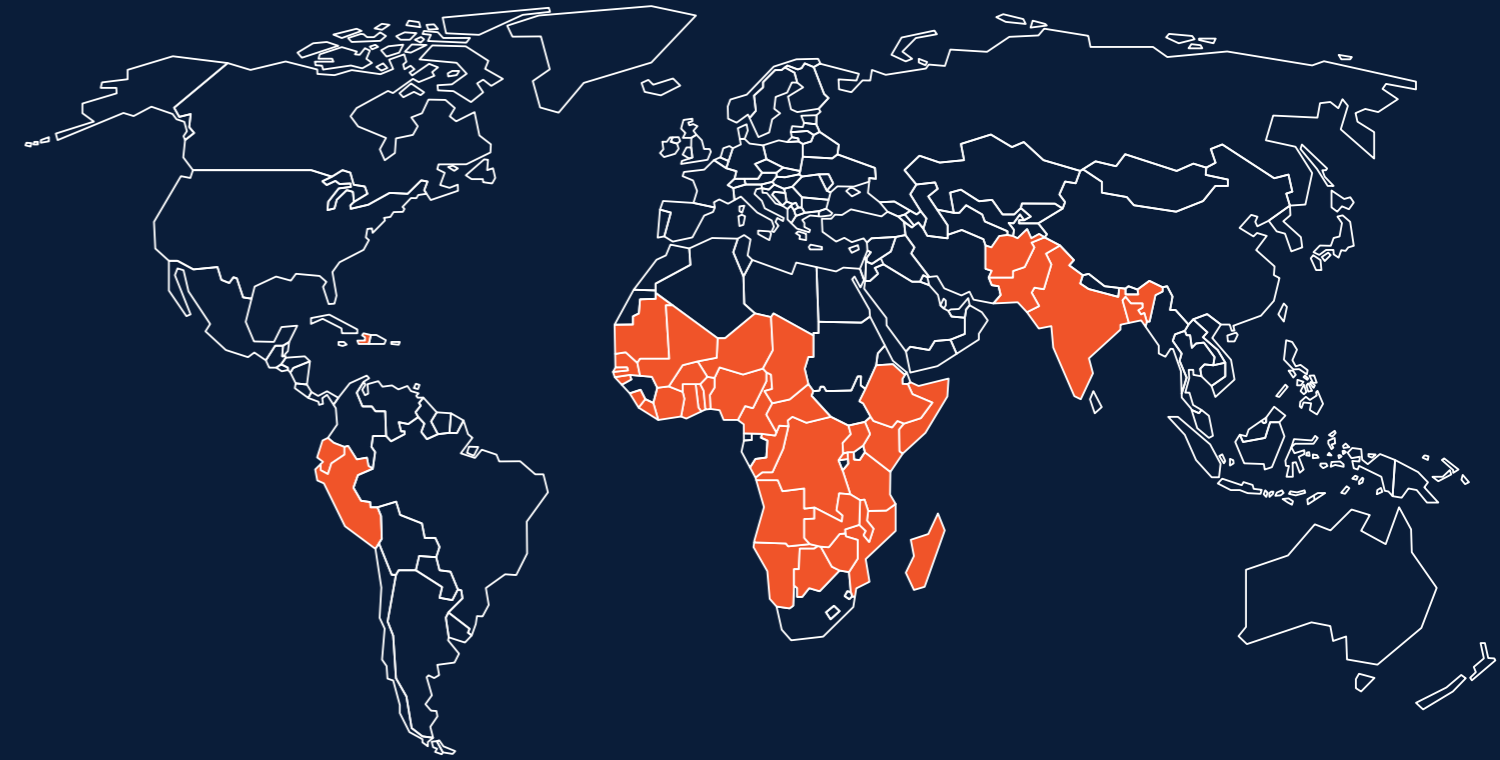
Solar Surgery
2024/2025

Electrical power outages, expensive diesel, and unreliable hydropower wreak havoc on health systems often with catastrophic impact.

Why Solar Surgery?

Our award-winning Solar Surgery system can power any essential medical equipment up to and beyond an entire operating room, meaning you can transform care no matter where in the world you are working.

- Equipment 100% powered by solar panels.
- Provides surge protection for all equipment in OR; prolonging equipment lifespan and infrastructure investment.
- More than 8 hours of backup power after sundown with normal use.
- Reduces carbon footprint and removes reliance on diesel or hydroelectric generators.
- Minimizes power draw from grid and reduces electrical costs.
- Low maintenance and easy installation.
- Uninterrupted power to the operating room during an outage ensuring patient safety.



Countries that currently benefit from the technology and expertise of Global Hospital.

Global Hospital is a specialist firm experienced in delivering healthcare infrastructure across 40 low-resource countries. From procurement of locally appropriate equipment through installation and ongoing maintenance, we are the partner you can trust to ensure your project has the impact you want.

Global Hospital is owned by Kids Operating Room, the world's leading charity focused on developing surgical infrastructure for children. By working with us you are helping children access safe surgery around the globe.

"We are in Africa; power is a challenge across the continent... having a power backup, having a solution to power failure, it actually gives me confidence as a surgeon and a practitioner to go ahead and operate."

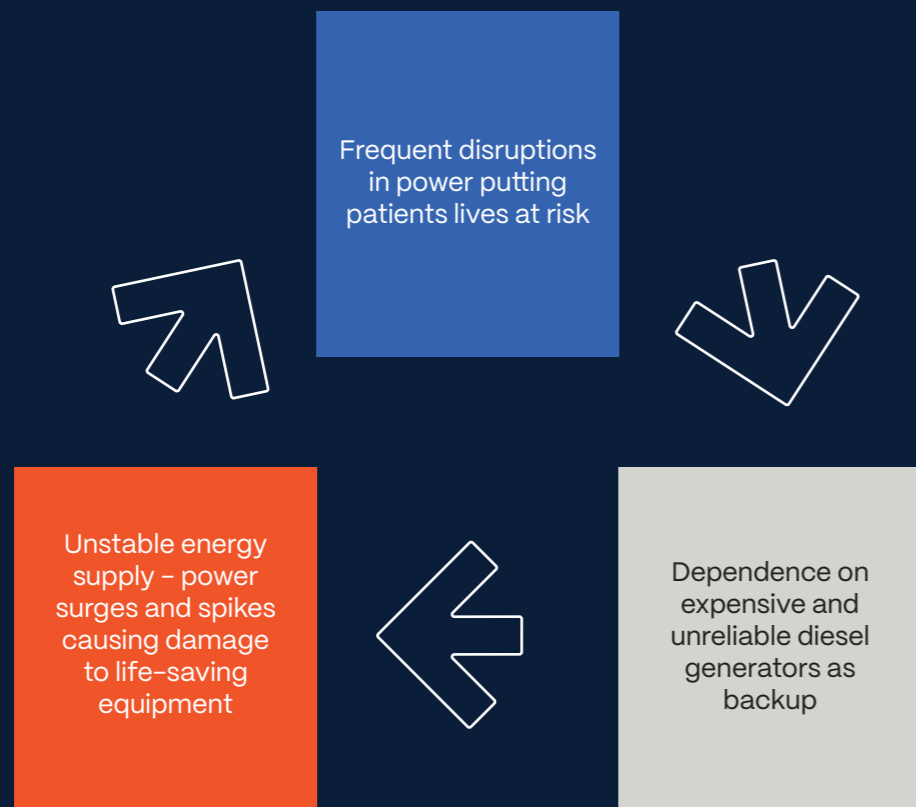
- Dr. Erasmus Muganda, Sally Mugabe Hospital, Zimbabwe



Patients undergoing surgical procedures are often the most vulnerable to the impact of a power outage.

Irregular power supply in hospitals across low- and middle-income countries risks patient safety, damages essential equipment, and reduces the impact of an already overstretched health workforce.

Power Challenges in Low-Resource Setting Operating Rooms



Power supply challenges hold back advancements in care, cost lives, and limit the effectiveness of aid interventions.

Hospitals face near daily outages, with many lasting for hours. In the operating room, a loss of electricity mid-operation can be catastrophic. Now the flashlight in the corner, desperately used to try and finish an operation, can be a thing of the past.

Specially designed for safe surgery in low-resource settings, Solar Surgery harnesses the power of the sun, integrates battery backup with the local grid, and ensures seamless supply for clinicians.

With Solar Surgery, patients' lives are saved, hospital running costs are reduced, and carbon footprints are made smaller. Solar Surgery ensures the surgical team will never be left in the dark again.

The lights going out and the equipment failing mid-operation can now be a thing of the past!

Research and Development

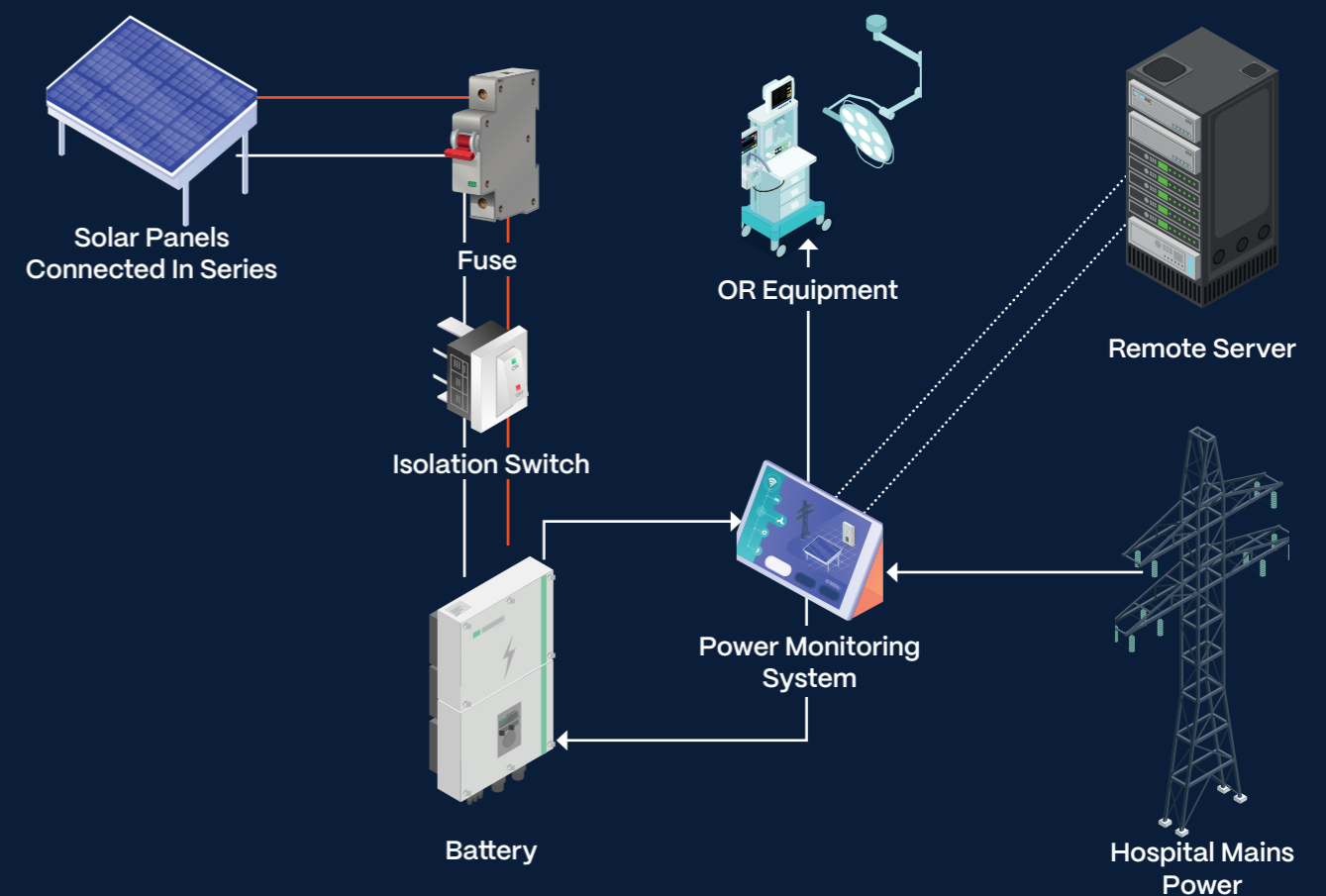
Born out of our experience developing surgical systems across more than 40 countries, Solar Surgery has undergone extensive development testing.

First in our UK center where the system was designed and tested in a purpose-built operating room using northern hemisphere sun levels. Then, after months of development, Solar Surgery was approved for deployment to four hospitals for live testing in surgical procedures.

In Nigeria, Democratic Republic of the Congo, Tanzania, and Zimbabwe, Solar Surgery saved lives during a heavily monitored live trial. In these hospitals, power cuts no longer interrupt surgery.

Monitoring of power outage frequency shows that in some hospitals it is all too common a problem. In one hospital, outages occurred on 25 days in a single month, with the average power cut lasting 99.7 minutes. On days when the power was out, it was usually out more than once, meaning the average operating time lost on these days was four hours.

Providing enough solar power to run any operating room, and surge protection for all the equipment in use, Solar Surgery stores surplus energy in a battery and seamlessly integrates it when needed. **Even after dark, the surgical team will have more than 8-hours of normal usage before the system will finally revert to the hospital grid supply.**



Utilizing a 1.2KW array of panels (extendable to 2.4KW) the Solar Surgery system provides enough power for all the equipment in an operating room.

With a 5.1KW smart battery providing enough power to run a full day of surgical activity, power cuts no longer interrupt surgery. The smart battery is also connected to the hospital's main power supply, which moves from being the primary source of power to a backup supply, should an operation last all night.

Providing protection to critical medical devices using the latest sine wave inversion technology – Solar Surgery eliminates voltage irregularities, power surges, and spikes.

Prioritizing solar, the smart battery will seamlessly switch the supply between the three sources (solar, battery, mains) to ensure the clinical team have all the power they need.

Installed by qualified engineers who provide local training, and with a three-year warranty,

the Solar Surgery system is a 'plug and play' solution to crippling power outages.

A free-standing ambient LED light can be included to ensure staff safety when the main power does go down. This can be used as the permanent light source for the room if preferred.

Where the existing operating lights are of poor quality, we recommend adding a high-quality mobile light. Where the existing operating lights are sufficient, they are hard wired into the system to stay on whenever they're needed.

Through extensive R&D, our Solar Surgery system can power any operating room for any surgical procedure anywhere in the world.

Additional Optional Services

Mobile Monitoring*

With integrated remote monitoring available as an optional additional service, the Solar Surgery system is not simply installed and then left. Our alert system will inform us of any problems and our network of engineers are on hand to respond.

We can provide live monitoring of performance to customers and we can take an active role in the uninterrupted supply of clean power through a proactive maintenance program all delivered using local people.

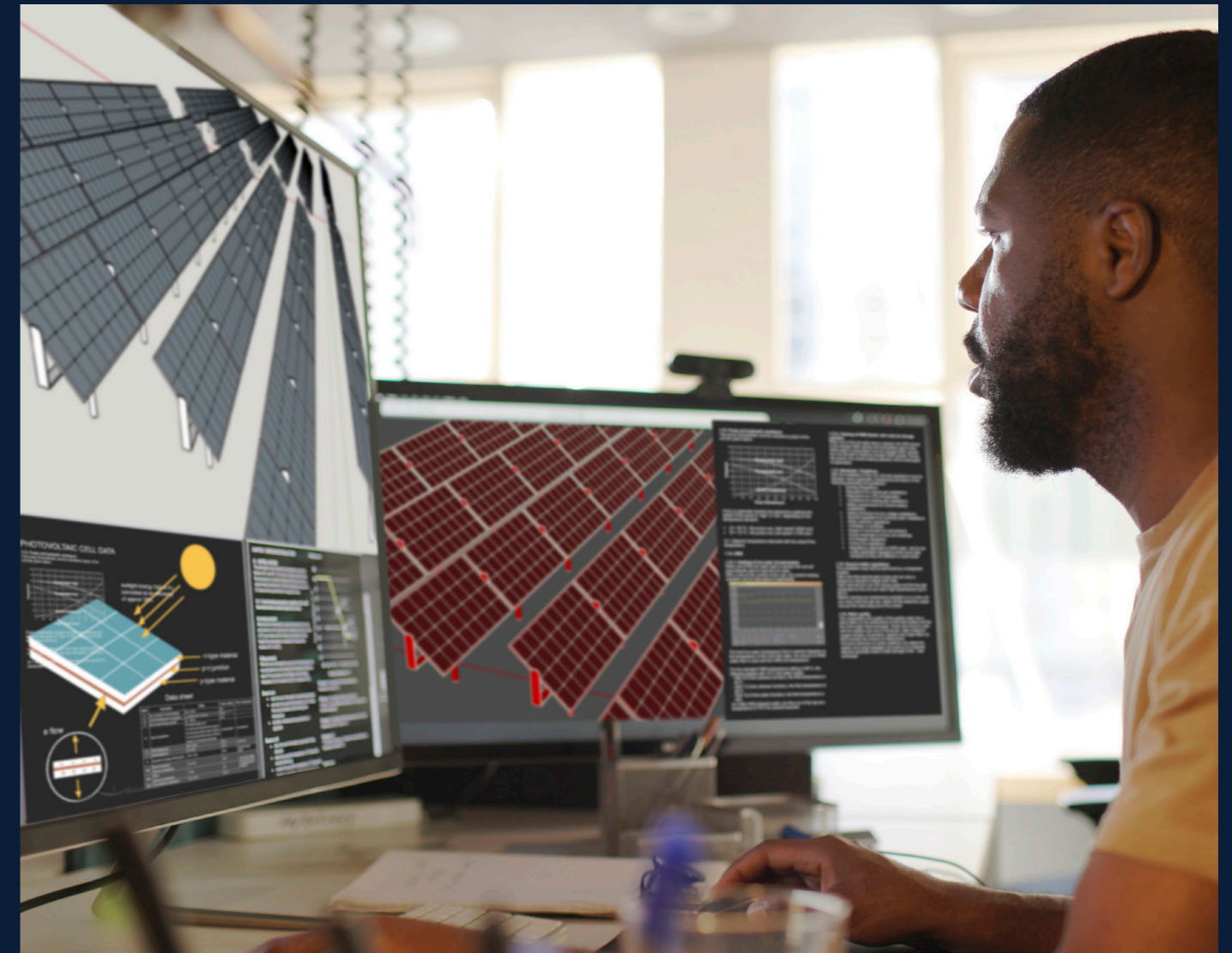


Ruggedized Version*

Tailored explicitly for disaster relief and harsh environmental conditions.

Engineered with durability and resilience at its core, this specialized iteration is designed to ensure it thrives in the face of adversity. A robust exterior shields against the harshest elements and protects the device's internal components against dust, water, and impact damage.

With a focus on reliability, this ruggedized solution emerges as a steadfast companion in disaster-stricken areas, providing uninterrupted functionality and support when it matters most.



Technical summary

Smart Battery

- 5,100Wh LiFePO4, 6000+ Charge Cycle
- 3,000W Pure Sine Wave Output
- Remote app monitoring and control*

Carbon Reduction

- 2.6 tons of carbon reduction per year of activity for every operating room

Solar Panels

- 3x 400w 108 cell Mono-crystalline panels
- Maximum Voltage 31.1v per panel
- Maximum Current 12.87A per panel
- IEC 61215, IEC 61730, UL 61730
- ISO 9001:2005, ISO 14001:2015
- TS62941
- ISO 45001:2008

Mobile Operating Light*

- 20,000 lux
- 40cm head
- 4500k color temp
- 95 Ra CRI
- 60,000 hours life

*Additional optional service

Become a part of the Solar Surgery success story



Comments from Partner Surgeons:

"So imagine there's a power failure... someone can bleed and die on me, but having the security of a power backup gives me comfort as a surgeon... We have had scenarios in the past where we had to finish operations using our lights from the torches and it's not a good experience... there are issues of infection control, the lighting is poor and you won't be comfortable in doing operations."

- Dr. Erasmus Muganda, Sally Mugabe Hospital, Zimbabwe

Awards and Accolades



"...sometimes the diesel generator tends to take time to kick in when there is a power outage. So whenever you have this in place, it has just been smooth, without any problem, and unlike the diesel powered generators."

- Dr. Lazaro Mboma, Mbeya Zonal Referral Hospital, Tanzania

Our Solar Surgery system has been recognised at an international level for incredible contribution to sustainability and for the systems expert use of technology.

2023 Charity Times

Best Use of Technology
WINNER

Charity Sustainability Award
WINNER

2023 UK Sustainability Awards

Energy Innovation
Runner Up





GLOBAL HOSPITAL

FOR EVERY PATIENT

Global Hospital is a healthcare supply company providing Solar, Procurement, Engineering, Project Management and Design services to hospitals across Africa, Asia, and Latin America. We are entirely owned by Kids Operating Room, the world's leading children's surgery charity. All our profits go to KidsOR to create a world where every child has access to safe surgery.

Contact us to discuss your needs and for a quote:

Email: Hello@GlobalHospital.org

Website: www.GlobalHospital.org



Scan here to visit our
LinkedIn page.

We are happy to have an engineer visit your hospital or to meet with you from any of our bases in Nairobi Kenya, Edinburgh Scotland, London England, or New Haven USA.