

Solar Power for Health Facilities

The challenge: The ability of local health facilities to provide essential health services is compromised when they cannot access reliable electrical power. Facilities lack lighting for safe patient care, including deliveries, and cannot make use of basic electrical equipment, such as refrigerators for safe storage of medicines. The conditions for health workers and patients are also negatively affected by the inability to power cooling fans when it is hot, or heaters when it is cold.

The solution: Solar energy can provide a reliable and sustainable power source for lighting, medicine refrigeration, and operation of essential equipment.

The technology: There are two systems, one Direct Current (DC) and the other Direct Current to Alternating Current (DC-AC).

- The DC system powers the refrigerator. Solar panels convert sunlight into electricity to run the refrigerator and to charge the battery which provides a backup during periods without sunlight. A power controller protects the battery from over-charging or being drained to a very low charge level, which can reduce its lifespan and performance.
- The DC-AC system powers the lighting and healthcare equipment. Solar panels generate DC electricity which is converted into AC using an inverter. To ensure the system functions during periods without sunlight, a battery is used for backup.

Illustrative output: A 1 kilowatt-peak (kWp) system is sufficient for a small facility.

Lifespan? @15 years.

Why choose solar power?

- ✓ Effective and environmentally friendly electrification option.
- ✓ Improves health care provided by local health facilities.
- ✓ Can operate in remote and off-grid locations.
- ✓ Cheap to run and maintain.
- ✓ Can power vital equipment such as nebuliser, baby warmer, medicines refrigerator, etc.

