

# EnerSHelf

Energy-Self-Sufficiency for  
Health Facilities in Ghana



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## Contributing to a Sustainable Future

As an important catalyst for sustainable development, access to a reliable source of clean energy is vital for inclusive economic development, improved human health, wellbeing and security. As such, EnerSHelf can contribute to Sustainable Development Goals (SDG) of health (SDG 3), energy (SDG 7) and partnerships (SDG 17).

Success of the project will not only contribute to sustainably energizing health facilities in Ghana, but also help reduce global CO2 emissions and identify important variables in the implementation of the PV power model in other regions and sectors.

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## Clean and Sustainable Energy for Ghana

In Ghana, the total electricity consumed has almost doubled between 2008 and 2018 according to the Energy Commission of Ghana. This goes along with an instable power grid, resulting in power outages whenever electricity consumption peaks. To change the conventional energy intensive economic development and its negative impact on the environment while enhancing the stability of the grid, the Ghanaian government passed a **renewable energy law in 2011**.



## In Search of High-Powered Solutions

The blackouts called “dumsor” in Ghana, pose a severe burden to the healthcare sector. The cold chain for required vaccines and blood supply may be cut, the light in the operating room may stop working any time and life-saving medical equipment may fail. With the African continent having the richest solar resources on the planet, **photovoltaic (PV) power**, which harnesses energy from sunlight, could be the source of reliable, affordable electricity to run life-saving equipment in hospitals.

However, the PV market in Ghana requires further **expansion and innovation** if it is to keep pace with the country’s accelerating demand for energy. According to the World Bank (2017) only 3% of the population in West Africa and the Sahel can currently access PV power through **off-grid systems**. Innovative solutions are needed to reduce greenhouse gas emissions and improve energy and health access.

### Project Quick Facts

- **Project:** EnerSHelf – Energy Supply for Healthcare Facilities in Ghana
- **Location:** Ghana
- **Sponsor:** German Federal Ministry of Education and Research (BMBF)
- **Funding period:** 01.06.2019 – 31.05.2022

## EnerSHelf: A Ray of Sunlight for the Health Sector

The German-Ghanaian project EnergySelf-Sufficiency for Health Facilities in Ghana (EnerSHelf) aims to address this; experts from academia and industry work together on both technical, economic and political questions to improve and disseminate **marketable PV based energy solutions** for health facilities in Ghana.

EnerSHelf has an interdisciplinary and context specific design. The **engineering expertise** of EnerSHelf will address the technical optimization of PV solutions in Ghana and see the installation of PV solar panels in health facilities in three locations.

**Economists** will address the feasibility of PV based energy solutions from a **political-economic perspective** and will determine barriers and drivers of change towards a sustainable energy transition.

**Climate scientists** will develop and apply energy-meteorological forecasts in unprecedented spatial resolution.

The **interdisciplinary approach** and the close collaboration with **stakeholders and local change agents** throughout the project will contribute to the development of tailor-made and context-specific technological solutions. This will facilitate the use of **sustainable market-based PV energy solutions** and contribute to energising Ghana’s future.

## Project Partners

- International Center for Sustainable Development (IZNE) at the University of Applied Sciences Bonn-Rhein-Sieg (H-BRS) (project lead)
- Cologne Institute for Renewable Energy (CIRE) at the University of Applied Sciences of Cologne (TH Köln)
- European Association of Development Research and Training Institutes (EADI)
- Institute of Geography at the University of Augsburg (IGUA)
- Reiner Lemoine Institut (RLI)
- The Brew-Hammond Energy Centre (TBHEC) at the Kwame Nkrumah University of Science and Technology (KNUST)
- University for Development Studies (UDS)
- West African Science Service Center on Climate Change and Adapted Land Use (WASCAL)
- WestfalenWIND