

# Powering Health Research

## Lusaka Blantyre Blantyre Laboratory Facility, Zambia



### DESCRIPTION OF THE PROJECT

Introducing Lusaka Blantyre Blantyre World Class Solar Powered Research Facility at University of Zambia.

The collaborative effort between the Scottish Government, University of Glasgow, Kamuzu University of Health Science, KUHeS, underscores the pivotal role of partnerships in achieving sustainable development goals. embarked on a groundbreaking project to design, install, and commission a state-of-the-art solar power system at the Lusaka Blantyre Blantyre Research Laboratory at University of Zambia. This milestone project, funded by the Scottish Government International Development Department, led by the University of Glasgow, and supported by (KUHeS) in Malawi, signifies a major leap towards powering healthcare with sustainable energy solutions in the region.

The system will provide uninterrupted power, enabling the lab to operate continuously on a 24/7 basis. This project consists of roof-mounted solar power plant totaling **34.5 kWp**.

### REPORTABLE PROJECT IMPACT

- Optimized to export at least **6,085.07kWh** of clean energy to the grid in the first 5 months of the project.
- This will displace **2,263kg** of carbon dioxide over the lifetime of the technology.
- Youth and women empowerment.
- **Capacity Building:** The project resulted in an immersive competency - based training offered to 8 young Zambians who have been trained and certified in solar installations and 6 proceeded to on job training.
- **Job Creation:** 5 apprentices have now been taken on board.

### TECHNOLOGIES USED

- **PV Modules** – 64 Futura Sun 550 wp modules manufactured in Italy.
- **Inverters** – Fronius ECO Grid-tied inverter and 3 Victron multiplus ii inverter/charger.
- **Smart meters, control units, and data loggers** by Fronius.
- **Battery** – BYD Lithium ion battery 45kwh.
- **Mounting Structure** – K2 from Germany



# 2021/2022/2023/2024 PROJECTS SUMMARY

## REPORTABLE PROJECTS IMPACT

### Impact of Reportable Projects since 2021

Since 2021, we have accomplished significant achievements in our projects, resulting in substantial positive impacts:

#### System Installations:

- During this period, we successfully installed solar PV systems with a combined capacity of 9.4 MWp.

#### Carbon Dioxide Emissions Reduction:

- This collective effort is estimated to displace 15,060 tons of carbon dioxide annually, contributing significantly to environmental preservation.

#### Energy Cost Savings:

- The projected savings from our initiatives amount to approximately \$2,740,960 per year, based on current large business tariff rates, resulting in a reduced reliance on imported energy.

#### Clean Energy Export and Grid Integration:

- Our systems are effectively replacing reliance on thermal energy by exporting clean energy to the grid, facilitating a shift towards more sustainable energy sources.

#### Inclusion in BPC/Power Africa Rooftop Solar Program:

- All of our projects undertaken since 2021 have all been accepted into the BPC/Power Africa Rooftop Solar program, highlighting the credibility and quality of our work.

#### Empowerment and Diversity:

- Our projects have not only driven technical advancements but also created employment opportunities, especially for Botswana youth. Over 50 percent of these opportunities have been extended to women, demonstrating our commitment to gender inclusivity.

#### University Collaboration and Education:

- We hosted six industrial placements from the University of Botswana, with 75% of these placements being women, fostering knowledge exchange and skill development.

#### Research & Development Support:

- Our Research & Development (R&D) initiatives are actively supporting five full-time MSc (Master of Sciences) students at BIUST, promoting academic growth and practical learning.

#### Innovative Apprenticeship Programs:

- Pioneering innovation, we initiated the first solar apprenticeship program in Botswana in 2021, and further extended this program to Malawi and Zambia, qualifying Thirty-six young individuals in the process.

#### Empowerment through Community Initiatives:

- We played a pivotal role in establishing Botswana's first Community Distributed Energy Service company (DESCO), facilitating localized energy solutions.

#### Economic Opportunities for Citizens:

- Our R&D program has led to licensing, employment, and manufacturing opportunities for the citizens of Botswana, contributing to economic growth and self-reliance.

These accomplishments underscore our dedication to sustainable energy solutions, community empowerment, and impactful collaborations. We are committed to continually driving positive change and innovation in the energy sector.

