

Powering Education

University of Botswana

DESCRIPTION OF THE PROJECT

The University of Botswana, through Renewable Energy Hub, has launched a landmark solar photovoltaic project—the first and largest commercial-industrial solar initiative in Botswana to date. The project will deliver a total capacity of 5.7 MW across three phases.

Phase 1 involves the installation of a 1 MW rooftop solar system on various campus buildings, including the School of Engineering.

Phase 2 will add 4.7 MW through a single-axis tracker ground-mounted solar system.

Phase 3 Battery Storage System

The solar project will also power the Sir Ketumile Masire University Teaching Hospital. This transformative initiative is being developed in partnership with the University of Botswana, African Sun Energy, and B&H Electrical.

TECHNOLOGY USED

- **PV MODULES** – Jinko 615 W
- **INVERTERS** – Huawei Sun2000 100KTL
- **ENERGY METER** – Janitza UMG
- **DATA LOGGER** – Huawei Smart Logger 3000A
- **MOUNTING STRUCTURE** - K2

REPORTABLE PROJECT IMPACT

- To deliver a long-term renewable power solution for the university under a 20-year Power Purchase Agreement (PPA) with a take-or-pay structure.
- Provide an educational resource for the university
- The first PPA project in Botswana, with a non-recourse funding.
- This will displace **55,500 tons** of carbon dioxide lifetime saving.



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.

