Powering Communities

Jamataka

DESCRIPTION OF THE PROJECT

Jamataka, situated in the central region of Botswana, is a rural community that, like many remote villages, has only recently gained access to clean electricity and the transformative services it brings. The village has emerged as a focal point for advancing clean energy innovation, thanks to a collaborative effort between Sustainable Energy Botswana, and partners from the UK. This dynamic partnership has led to its selection as a testbed for the SolaFin2Go technology, an optimal solution for establishing new off-grid energy access infrastructure.

The groundbreaking SolaNetwork technology, coupled with innovative business models, is revolutionizing energy access in Jamataka village. This is being achieved through the implementation of a solar mini-grid network and a battery exchange program. Notably, the local community is actively engaged in these initiatives as integral participants within a profit-oriented Distributed Energy Service Company (DESCO). This approach not only facilitates clean energy access solutions but also fosters local capacity building within the sector.

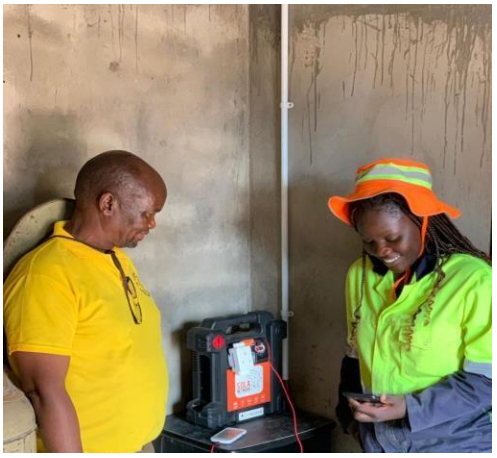
The R&D initiatives, funded by the UK Energy Catalyst program, were guided by the profound belief that a dependable energy source has the potential to significantly enhance lives. By improving the quality of life within the community, this endeavor acts as a catalyst for economic growth and has the potential to expand its impact to other regions, thereby advancing the implementation of Sustainable Development Goal 7 (SDG7).

REPORTABLE PROJECT IMPACT

- Provision of clean energy to the school and the staff houses.
- Number of new connections (residential, remote cattle posts)
- Establishment of a new community cooperative with a DESCO.
- Training events and activity

TECHNOLOGY USED

- **Mini Grid PV module** standard size for optimum cost-benefit.
- **Prosumer home systems -** solar PV with storage system
- **Mounting structure** for residential systems K2.
- **Portable Battery** sized for autonomy in cloudy weather periods (205Ah @12V).
- **Solar water heater** with heat retaining thermal diode integrated-collector-storage (28 Liter “Solacatcher”).
- **Controller** (MPPT) to manage battery charging & loads & utilize surplus electricity to boost hot water production.
- **Communications** to report energy consumption & system status to cloud via LoRaWAN & mobile phone



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 Batswana 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.