



Fondation Eagle
Interim Report
April 2022

Solar Energy Upgrade at Haller's Health Clinic & Education Centre

Donor Reference: FF 603-28

Date of Acceptance: 24th September 2021

Donation Amount: £10,980

Project Duration: October 2021 - October 2022

Number of Beneficiaries: approx. 9,500 comprising 3,000+ patients at Nguuni Health Clinic, 2,500+ at Community Health Outreach, 4,000+ footfall at Education Centre.

Location: Nguuni, Kisauni District, Mombasa, Kenya
S 03° 59' 35.7" E39° 41' 45.4"

Project Background

A cornerstone of the charity's environmental and sustainability ethos is 100% reliance on readily available solar energy, given Kenya's ideal position, close to the equator with long periods of daylight. With Kenya at the forefront of climate change, experiencing erratic weather patterns, Haller's aim is to ensure the continuing support of these environmental standards. BY 2020 we completed our goal of using solar energy at all 3 of our Haller Kenya hubs, The Nguuni Education Centre & Clinic, the Farmer Training Centre at Mtopanga and our Research Centre. This has also ensured uninterrupted access to Haller's health clinics and the safe storage of medicines and vaccines, which improve the lives of so many in our communities, as well as a reduction in annual energy costs **across all the sites**.

Our Nguuni Centre was the first to transition to solar power in 2015, with installation by East Africa's largest solar provider, Chloride Exide. However, by mid 2021 the current system was experiencing solar power outages at sunset, due to the reduced efficiency and age of the batteries and the age of the solar panels.

Nguuni Centre's Energy Needs

Haller's Nguuni Centre, is situated in a peri urban area, in the Nguu Tatu hills, 10 minutes from Mombasa's Jurassic coastline. The centre houses the health clinic and dispensing pharmacy, children's education centre and library, the IT learning centre and is also the gateway to the Nguuni Nature Sanctuary, a Haller restoration project, self-funding and now open to the public.

A guaranteed power source, readily available from solar energy, is critically important for the following:-

- The treatment rooms at the Health Clinic, which store vital medication and vaccines. The reliable provision of U5 vaccination services, health workshops, family planning clinics, counselling & life skills sessions and pharmacy dispensation is guaranteed.
- Haller's Education Centre, and its learning programmes. This houses the Children's Library and Amphitheatre, hosting educational activities to 60 local schools and providing a safe space for local children to learn. This is a particularly invaluable resource, never more than during the pandemic lockdowns, where state schools were closed for long periods and children were provided with creative, wildlife and educational facilities.
- The IT suite & interactive whiteboard for learning, IT training and vocational workshops.
- The security and electric fencing which enables Haller to manage a revenue creating small eco-tourism business generating income towards our children's educational activities.

Project Update

A recent inspection of the system in October 2021 by a reputable, local energy consulting firm Erori Solar Consulting, recommended that an upgrade was required, with a proportion of the solar panels and the complete battery bank needing replacement. It was estimated that given the mean temperature in the region of 30C and a depth of discharge of 30%, the battery life should have been approximately 8 years. The old system had served the centre well, but the reduced lifespan of 7 years, had been impacted by the dusty quarry road adjacent to the site, affecting the life of the hardware.

This is a jointly funded project, with proceeds for the solar panels provided by yourselves and the cost of the battery bank replacement recently received from another long-term donor. A phased upgrade of the system will be carried out, to ensure that the centre can continue to operate efficiently. To date, 26 x 540W JINKO solar panels have been sourced and purchased, with installation due shortly. Sourcing of the battery bank hardware is currently taking place. This solar system upgrade will reduce the need for constant system maintenance, with the installation of more advanced equipment, as solar energy technology in Kenya has moved apace since the initial installation of 2015.

Expenditure to Date:

SOLAR ENERGY UPGRADE AT NGUUNI	Budget £	Actual	Diff
Provision of 20 x 250W solar panels & 4 x 2000Ah Sunlight 2V cells *	8,900	8,100	800
Cost of Installation (Labour)	900	0	900
Transport of Materials	200	200	0
Project Supervision/ Delivery Costs	980	250	730
TOTAL SOLAR ENERGY	10,980	8,550	2,430

Recent Nguuni Centre Activities

Comprising:

- Celebrating World Earth Day with local children
- Children's life skills sessions in the auditorium
- Malnutrition and vaccination screening sessions



Conclusion

Thank you so much for your support of this capital cost project, essential to our work delivering health and education services to Kenyan communities.

We look forward to updating you in the next 6 months and report on the impact the upgraded solar system has on the efficient running of this vital hub.

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