

Oktober 2024



## Overview of Interventions by Energy Solutions for Displacement Settings in Uganda

Photo Credit: Malaika/GIZ



Implemented by:



In cooperation with:



## PROJECT

Energy Solutions for Displacement Settings (SUN-ESDS) is a component of the Global Programme Support to UNHCR in facilitating the operationalisation of the Global Compact on Refugees in the Humanitarian-Development-Peace Nexus (SUN), which is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

Click here to watch a video on SUN-ESDS activities in Uganda: [ESDS Film 2023](#)



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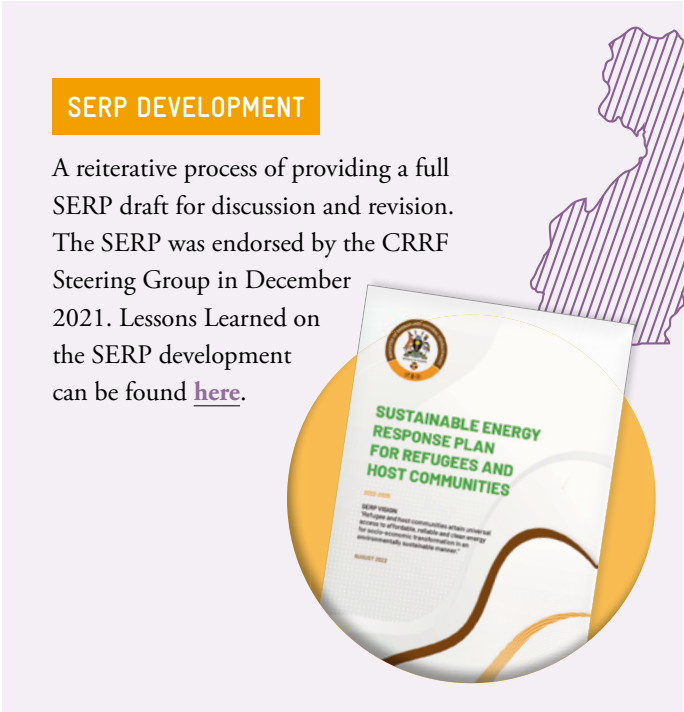
# DEVELOPMENT OF THE SUSTAINABLE ENERGY RESPONSE PLAN FOR REFUGEES AND HOST COMMUNITIES (SERP)



## SERP CONSULTATIONS

To gather valuable inputs for the SERP, consultations with various stakeholders were held across 12 refugee-hosting districts from November 2020 to March 2021.

Photo credit: Paul Quigly, Consultant Integration



## SERP DEVELOPMENT

A reiterative process of providing a full SERP draft for discussion and revision. The SERP was endorsed by the CRRF Steering Group in December 2021. Lessons Learned on the SERP development can be found [here](#).



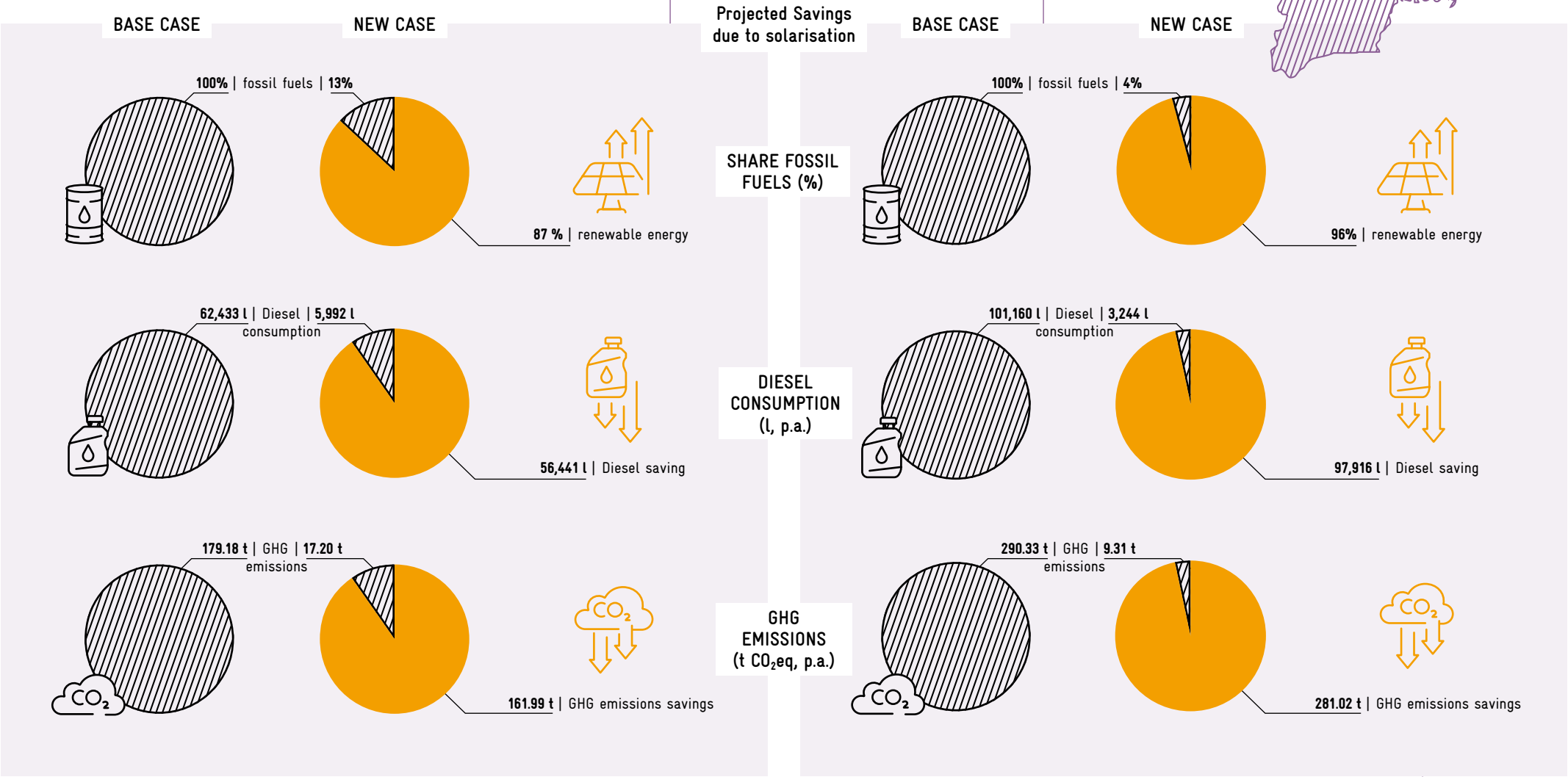
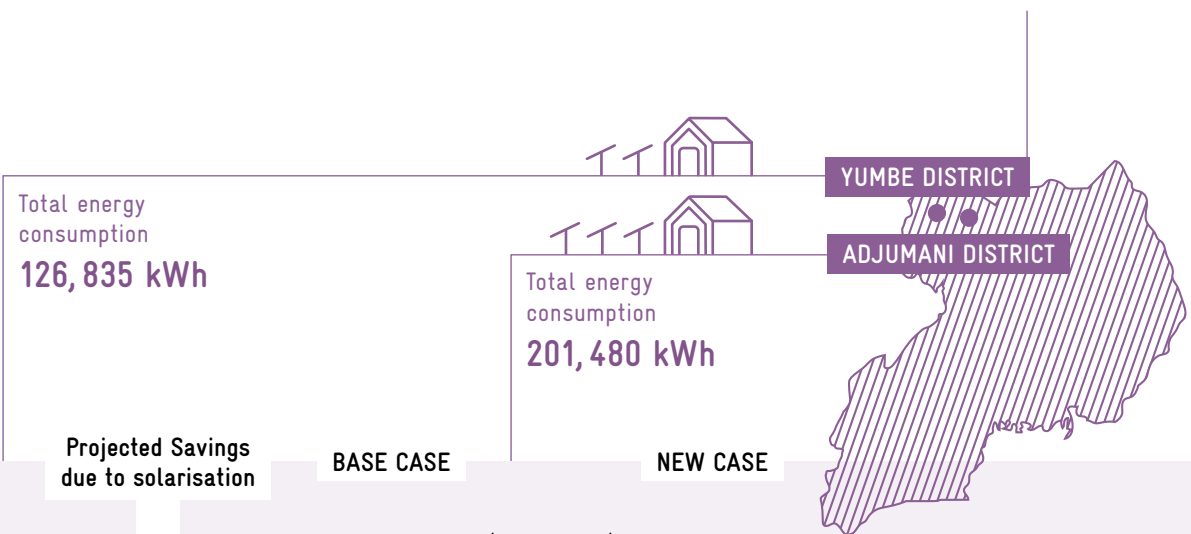
Photo credit: Malaika/GIZ

## SERP LAUNCH

Publication, dissemination, and advocacy of the SERP and the official [launch event](#) on the 25th of August 2022.

SUPPORTING UNHCR IN SOLARISING COMPOUNDS IN ADJUMANI AND YUMBE DISTRICT

ESDS supported the feasibility studies, business case development, development of procurement documentation, regulatory analyses, and environmental and social impact assessments.





# MARKET-BASED ENERGY ACCESS FOR HOUSEHOLDS, SOCIAL INSTITUTIONS, AND PRODUCTIVE USERS OF ENERGY

## IMPROVED INSTITUTIONAL COOKSTOVES (IICS) FOR SOCIAL INSTITUTIONS



Photo credit: Ben Butele/GIZ

### IMVEPI RECEPTION CENTRE

- Construction of double IICS and kitchen shelter
- Two double-oven ICCS each (total of 4 fixed stoves, with 300 litre saucepans and lids)
  - One kitchen shelter each measuring 12m by 6m



Photo credit: Anja Rohde/GIZ

### OCEA RECEPTION CENTRE

Constructed and commissioned in November 2019

### OMUGO RECEPTION CENTRE

Installation of mobile IICS  
Three Mobile IICS single ovens (with 250-litre saucepans and lids).

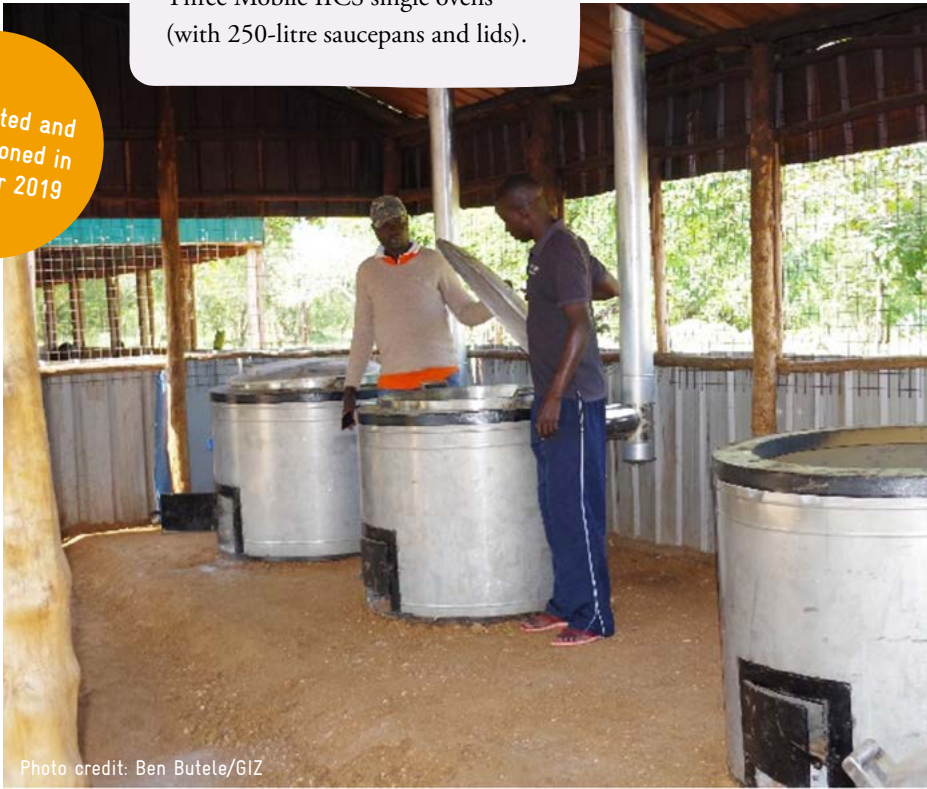
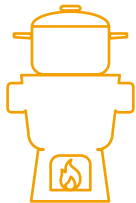
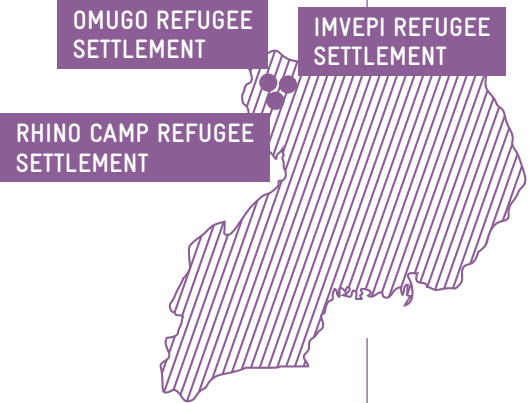


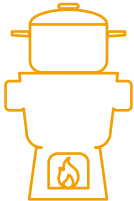
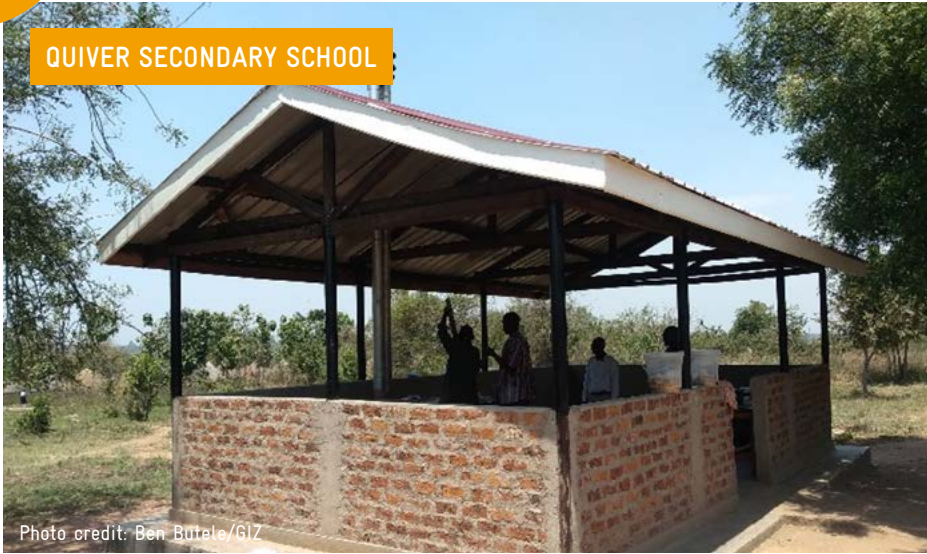
Photo credit: Ben Butele/GIZ







- Construction of double ICCS and kitchen shelters
- One double-oven ICCS each (2 fixed stoves, with 300 litre saucepans and lids)
  - One kitchen shelter each measuring 12m by 6m



Constructed and  
commissioned  
in 2019



SOLARISATION OF SOCIAL INSTITUTIONS



Photo credit: Rolex Muceka/GIZ

OFUA SECONDARY SCHOOL

Installation of solar PV system and Information and Communications Technology (ICT) equipment upgrade  
Range of ICT items such as 20 monitors with accessories, projector with screen, internet router, inkjet printer, etc.

Commissioned  
in July 2022



RHINO CAMP HIGH SCHOOL

Photo credit: Malaika/GIZ



1091 learners  
Total number (2023)

1.875 kWp  
Solar panels

874 Refugees  
(297F|557M)

1,200 Ah  
Battery capacity

271 Hosts  
(90F|127M)

2 kW  
Inverter



1259 learners  
Total number (2023)

1.875 kWp  
Solar panels

713 Refugees  
(314F|399M)

1,200 Ah  
Battery capacity

546 Hosts  
(278F|268M)

2 kW  
Inverter



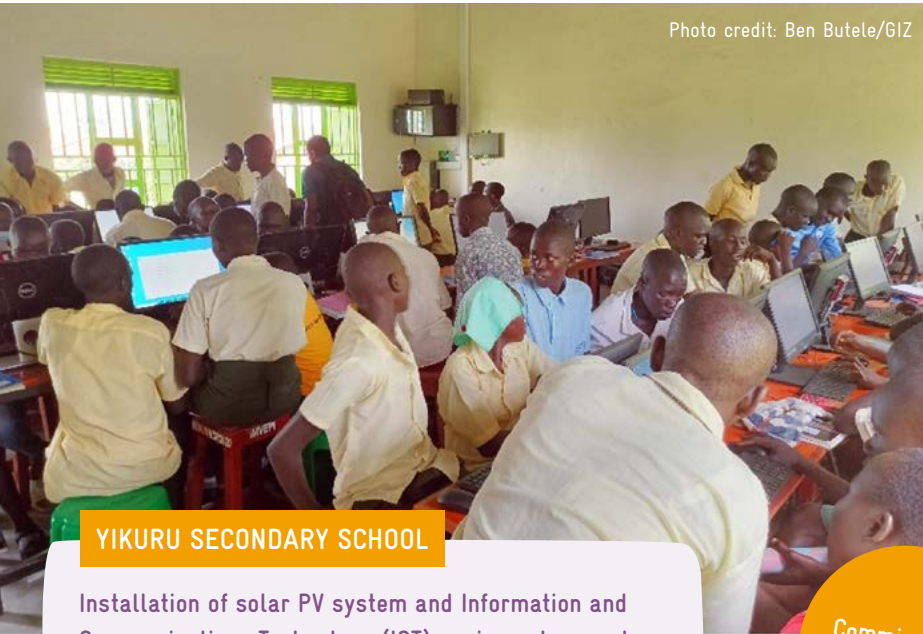
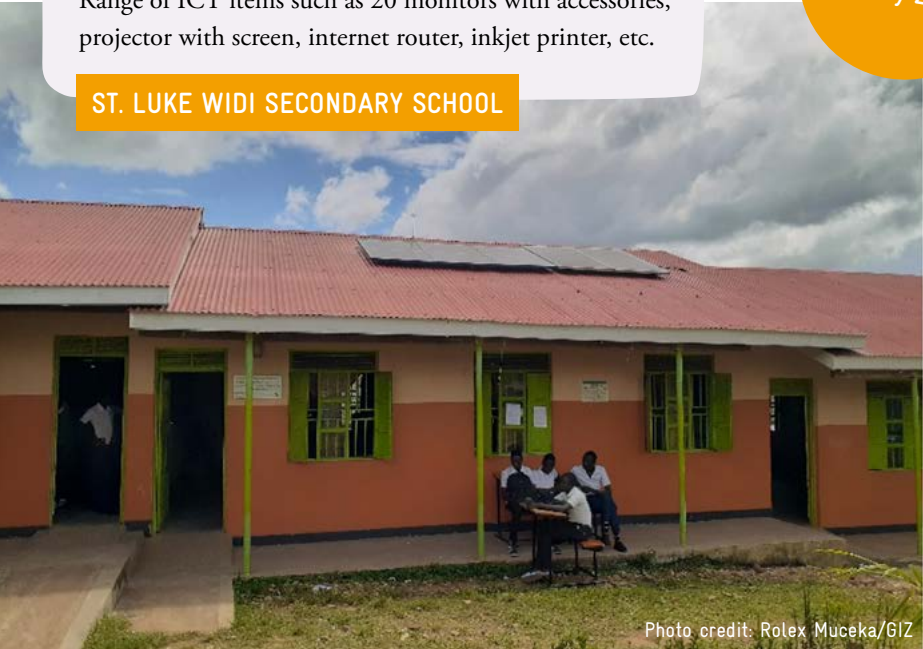


Photo credit: Ben Butele/GIZ

YIKURU SECONDARY SCHOOL

Installation of solar PV system and Information and Communications Technology (ICT) equipment upgrade  
Range of ICT items such as 20 monitors with accessories, projector with screen, internet router, inkjet printer, etc.

Commissioned  
in July 2022



ST. LUKE WIDI SECONDARY SCHOOL

Photo credit: Rolex Muceka/GIZ

686 learners  
Total number (2023)

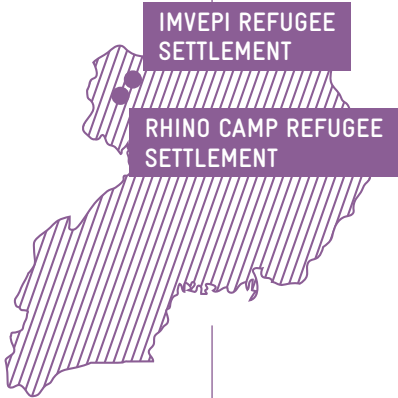
1.875 kWp  
Solar panels

538 Refugees  
(142F|396M)

1,200 Ah  
Battery capacity

148 Hosts  
(49F|99M)

2 kW  
Inverter



853 learners  
Total number (2023)

1.875 kWp  
Solar panels

633 Refugees  
(155F|478M)

1,200 Ah  
Battery capacity

214 Hosts  
(72F|148M)

2 kW  
Inverter





SOLARISATION OF HEALTH CENTRES



Photo credit: Bridge Films/GIZ

Constructed and commissioned in June 2021

URIAMA HEALTH CENTRE III

Installation of solar systems

**30,952 people**  
Total catchment population of HC (2023)

**6.6 kWp** Solar panels      **4,800 Ah** Battery capacity      **10 kW** Inverter



Photo credit: Bettina Baesch Ssemwaka/GIZ

SIRIPI HEALTH CENTRE III

Installation of solar systems

**18,590 people**  
Total catchment population of HC (2023)

**3.3 kWp** Solar panels      **1,600 Ah** Battery capacity      **5 kW** Inverter



Photo credit: Bettina Baesch Ssemwaka/GIZ

IMVEPI HEALTH CENTRE II

Installation of solar systems

**22,892 people**  
Total catchment population of HC (2023)

**4.4 kWp** Solar panels      **2,400 Ah** Battery capacity      **5 kW** Inverter



[Click here for more information on health centre technical sizing and design methodology and electrification of health centres.](#)



INCOME GENERATING ACTIVITY TO SUPPORT OPERATIONS AND MAINTENANCE OF HC SOLAR PV SYSTEMS



Commissioned in  
June 2021

URIAMA HEALTH CENTRE III

Establishment and operationalisation of a canteen to support the operation and maintenance of health centre solar PV system with permission through sub-county council ordinance.  
Trainings of Health Unit Management Committees and canteen operator to improve their capacity on business development and management.

- Supply of fabricated container measuring 2m by 4m connected to Solar PV System of the health centre
- Provision of 2 charging boards with 40 phone charging ports and chargers, 1 photocopier/printer, 1 fridge, and basic furniture

IMVEPI HEALTH CENTRE II



OFUA ZONE, RHINO CAMP REFUGEE SETTLEMENT

IMVEPI REFUGEE SETTLEMENT





CONSTRUCTION AND OPERATIONALISATION OF SOLAR POWERED ENERGY KIOSKS



ICON ELECTRONICS ENERGY KIOSK

3.3 kWp Solar panels  
2,400 Ah, 12V Battery capacity  
5 kW Inverter

Photo credit: Malaika/GIZ

Commissioned in May 2021

Construction of Energy Kiosks providing access to products (improved cook stoves, solar lights, solar home systems, etc.) and services (phone charging, secretarial services, banking, basic computer training, etc.). Provision of business start-up items for the kiosk run by a local community group consisting of refugees and host community members.

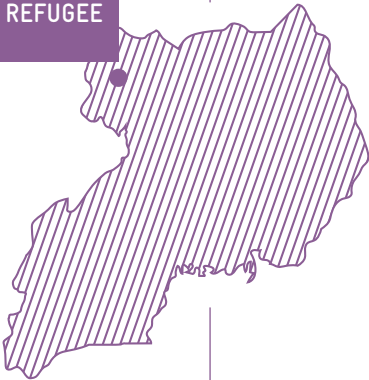


ALPHA ICT ENERGY KIOSK

3.3 kWp Solar panels  
2,400 Ah Battery capacity  
5 kW Inverter

Photo credit: Bettina Baesch Ssemwaka/GIZ

RHINO CAMP REFUGEE SETTLEMENT





BIDIBIDI ZONE 1 GOD'S GRACE YOUTH GROUP ENERGY KIOSK

Construction of Energy Kiosk providing access to products (improved cook stoves, solar lights, solar home systems, etc.) and services (phone charging, secretarial services, banking, basic computer training, etc.). Provision of business start-up items for the kiosk run by a local community group consisting of refugees and host community members.

3.3 kWp  
Solar panels

2,400 Ah  
Battery capacity

5 kW  
Inverter



BIDIBIDI REFUGEE SETTLEMENT

SALAAMA MULTIPURPOSE COMMUNITY GROUP ENERGY KIOSK

Construction of Energy Kiosk providing access to products (improved cook stoves, solar lights, solar home systems, etc.) and services (phone charging, secretarial services, banking, basic computer training, etc.). Provision of business start-up items for the kiosk run by a local community group consisting of refugees and host community members.

Originally, the energy kiosk was managed by a different group in another village. However, due to managerial challenges the energy kiosk got relocated to this group.

Commissioned in October 2024

2.75 kWp  
Solar panels

800 Ah  
Battery capacity

5 kW  
Inverter



ZONE 2



GREEN HILLS YOUTH RENEWABLE ASSOCIATION ENERGY KIOSK

Energy Kiosk at its first location before the relocation.

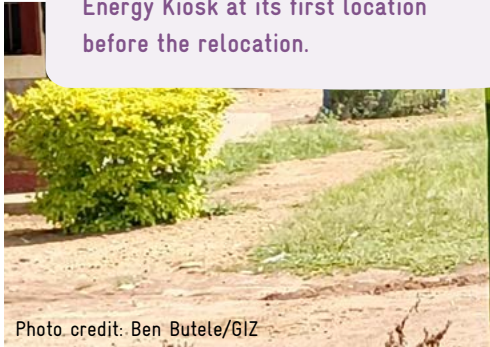


Photo credit: Ben Butele/GIZ



Click here for more information on [energy kiosks](#)





SUPPORT TO PRIVATE SECTOR THROUGH RESULTS-BASED FINANCING (RBF) MECHANISMS

RHINO CAMP, IMVEPI, BIDIBIDI, OMUGO, LOBULE, PALORINYA AND KIRYANDONGO REFUGEE SETTLEMENTS AND RESPECTIVE HOST COMMUNITIES

SOLAR COMPANIES SUPPORTED

D.light, SolarAid, Village Power, Fenix International (Engie), Fena Solar

2,100 quality solar products (solar home systems, charging and lighting solar lanterns) were sold to refugee and host households (HHs).

Between May 2021 and January 2024

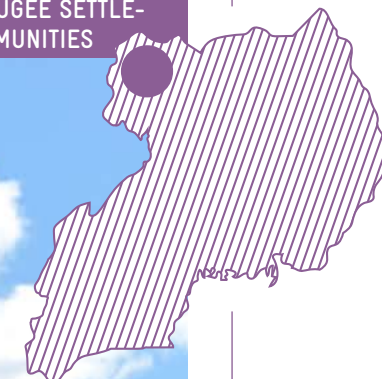
The RBF approach aimed to develop markets for sustainable access to quality solar products by strengthening supply chains in these non-commercially viable markets that are perceived to be risky by private sector solar companies. Solar companies were supported to develop and strengthen their delivery and access channels within the refugee and host markets with different results-based incentives, including gender incentives that particularly targeted involvement of women in the distribution chain as well as access. Supply side RBF was the major delivery mechanism, however, blended RBF targeting both supply and demand (end users) was piloted in Rhino Camp, Imvepi, and Bidibidi Refugee Settlements.

Photo credit: Malaika/GIZ





RHINO CAMP, IMVEPI, BIDIBIDI, OMUGO, LOBULE,  
PALORINYA AND KIRYANDONGO REFUGEE SETTLE-  
MENTS AND RESPECTIVE HOST COMMUNITIES



### COOKSTOVE COMPANIES SUPPORTED

- BM Energy Saving Equipment Limited
- International Lifeline Fund
- Raising Gabbho Foundation
- Clean Environment For Africa (CEFA)

Between  
October 2020 and  
September 2023

**11,500** quality improved cookstove products were sold to refugee and host households.

The RBF approach aimed to develop markets for sustainable access to quality improved cookstove products by strengthening supply chains in these non-commercially viable markets that are perceived to be risky by private sector solar companies. Through RBF support, the above cookstove companies were supported to develop and strengthen their delivery and access channels within the refugee and host markets with different incentives including gender incentives that particularly targeted involvement of women in the distribution chain as well as access.

Supply side RBF was the major delivery mechanism, however, blended RBF targeting both supply and demand (end users) was piloted in some settlements of Rhino Camp, Imvepi and Bidibidi.

Photo credit: Malaika/GIZ



[Click here for more information on RBF interventions](#)





IMPROVED WOOD FUEL MANAGEMENT



OCEA RECEPTION CENTRE

- Construction of wood fuel storage
- Training of 10 kitchen staff to better manage biomass fuel processing and storage
  - Wood storage shelter measuring 12m by 6m

Photo credit: Ben Butele/GIZ



IMVEPI RECEPTION CENTRE

- Construction of wood fuel storage
- Training of 8 kitchen staff to better manage biomass fuel processing and storage
  - Wood storage shelter measuring 12m by 6m

Photo credit: Ben Butele/GIZ

Commissioned in November 2022



RHINO CAMP HIGH SCHOOL

- Construction of wood fuel storage
- Training of 50 school environment club members, 6 kitchen staff and 2 teachers to better manage biomass fuel processing and storage as well as in tree growing.
  - Wood storage shelter measuring 12m by 6m

Photo credit: Ben Butele/GIZ

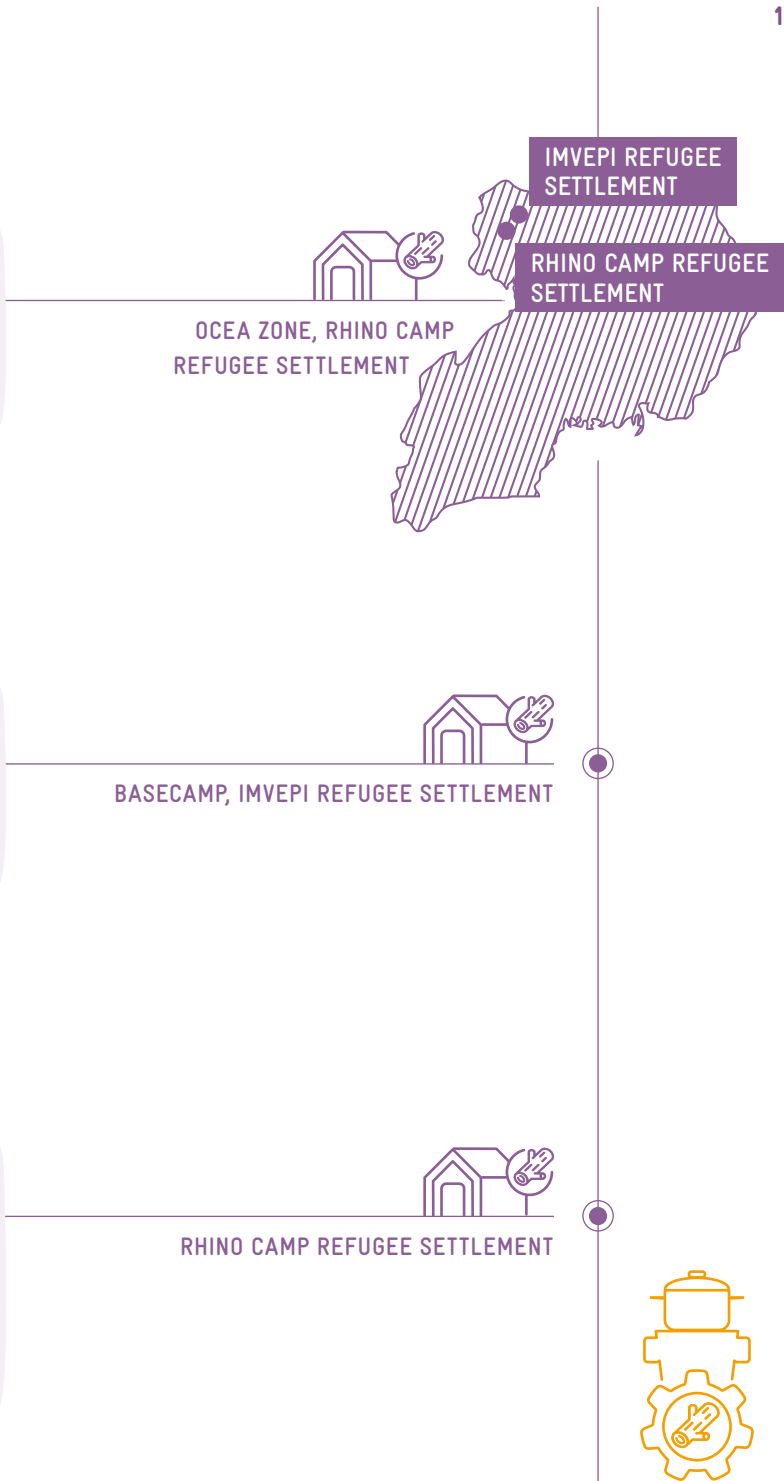






Photo credit: Heden Consult

RHINO CAMP HIGH SCHOOL

Establishment of woodlot for fuel

1,259 Beneficiaries  
Total as of 2023

713 Refugees  
(399M|314F)

546 Hosts  
(268 M|278F)

13 Acres  
allocated for tree growing

14,300 tree seedlings

+50% survival rate  
as of 2023

Activity carried out in 2022



Photo credit: Draru Asina ICT Teacher, Ofua S.S

OFUA SECONDARY SCHOOL

Establishment of woodlot for fuel

895 Beneficiaries  
Total as of 2023

507 Refugees  
(275M|232F)

388 Hosts  
(247M|141F)

3.5 Acres  
allocated for tree growing

1,800 tree seedlings  
(Total number of standing trees 967)

+50% survival rate  
as of 2024

Activity carried out in 2024





YOUTH ACTION IN CLIMATE RESTORATION  
(Y-ACRE) COMMUNITY GROUP

Youth Action in Climate Restoration is Registered as CBO in Rigbo sub county, operating in Katiku Village.



KATIKU VILLAGE, EDEN ZONE, RHINO CAMP REFUGEE SETTLEMENT

109 Members

Total Beneficiaries

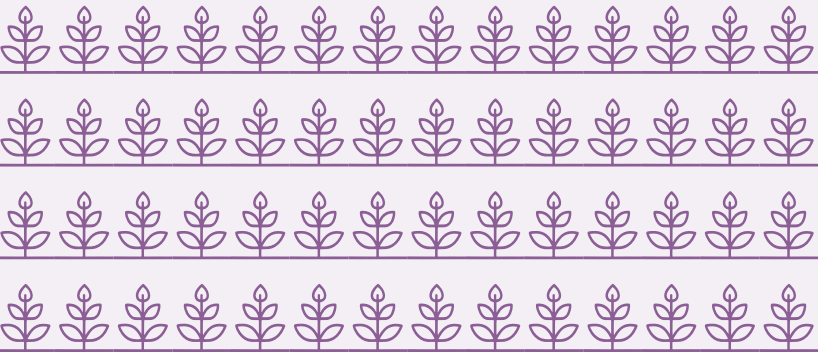
20 Acres

allocated for tree growing

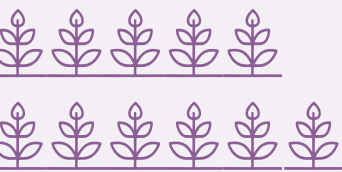
9,800 tree seedlings

45% survival rate

as of 2024



Activities carried out in 2024



YIKURU SECONDARY SCHOOL

Establishment of woodlot for fuel



IMVEPI REFUGEE SETTLEMENT

521 Beneficiaries

Total as of 2023

266 Refugees

(166M|100F)

255 Hosts

(149M|106F)

4 Acres

allocated for tree growing

2,400 tree seedlings

48% survival rate

as of 2024



ST LUKE-WIDI SECONDARY SCHOOL

Establishment of woodlot for fuel



OMUGO REFUGEE SETTLEMENT

841 Beneficiaries

Total as of 2023

521 Refugees

(380M|141F)

320 Hosts

(101M|219F)

3 Acres

allocated for tree growing

2,200 tree seedlings

50% survival rate

as of 2024

OMUGO REFUGEE SETTLEMENT

IMVEPI REFUGEE SETTLEMENT

RHINO CAMP REFUGEE SETTLEMENT



E-WASTE MANAGEMENT

**E-WASTE REPAIR AND COLLECTION CENTRE - OCEA**

- E-waste Hub structure measuring 6.1m by 2.5m (Power supply linked to already existing multi-purpose community hall)
- Items provided: Toolkit, Protective wear



OCEA ZONE, RHINO CAMP REFUGEE SETTLEMENT

Establishment of e-waste repair and collection centres for consistency

Supply and installation of a container serving as repair workshop for electrical appliances and solar lanterns, safe storage of end-of-life products, and youth skills development centre.

Training of technicians to manage the newly established e-waste repair and collection points in June 2024.

Commissioned in August 2024

Photo credit: Kisya Freisleben/GIZ



**E-WASTE REPAIR AND COLLECTION CENTRE - OFUA**

- E-waste Hub structure measuring 6.1m by 2.5m (Power supply linked to already existing energy kiosk)
- Items provided: Toolkit, Protective wear




OFUA ZONE, RHINO CAMP REFUGEE SETTLEMENT

Photo credit: Kisya Freisleben/GIZ



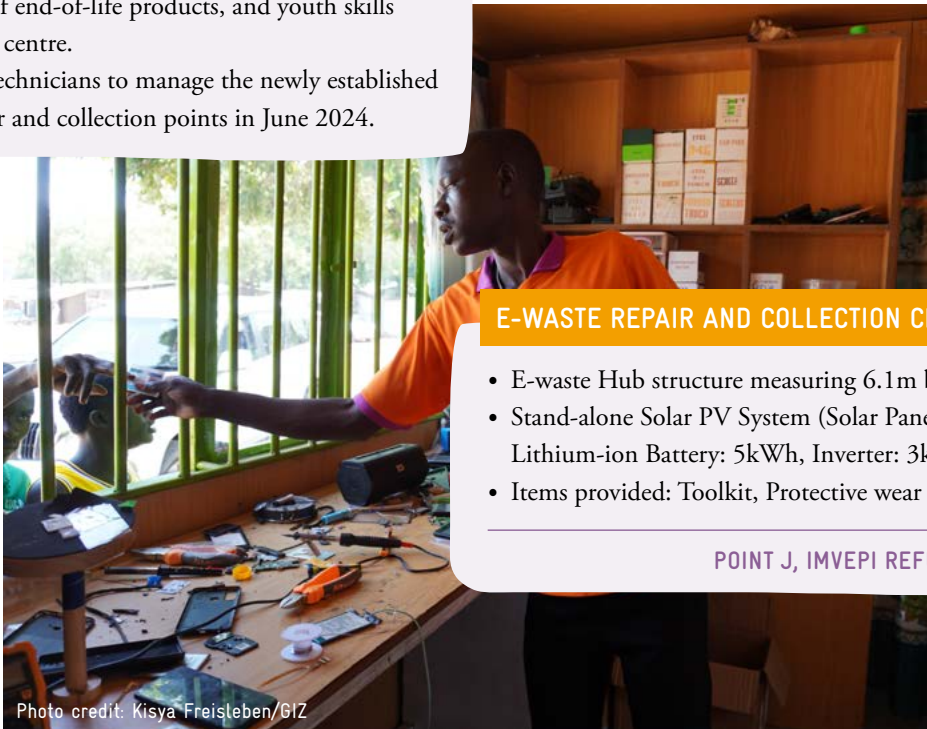
**E-WASTE REPAIR AND COLLECTION CENTRE - IMVEPI**

- E-waste Hub structure measuring 6.1m by 2.5m
- Stand-alone Solar PV System (Solar Panels: 1.9kWp, Lithium-ion Battery: 5kWh, Inverter: 3kW)
- Items provided: Toolkit, Protective wear



POINT J, IMVEPI REFUGEE SETTLEMENT

Photo credit: Kisya Freisleben/GIZ



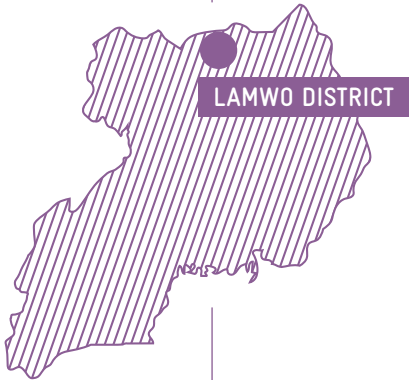


ACCESS TO ELECTRICITY BY PROMOTING MINI-GRIDS IN REFUGEE SETTLEMENTS



In cooperation with the GIZ Uganda Pro Mini Grids Project, Ministry of Energy and Mineral Development and GIZ pioneered the development of solar-powered mini-grids in 28 villages in Lamwo District. ESDS and GET.transform made financial contributions to this project for the installation of two mini-grids in Palabek Refugee Settlement and one mini-grid in a host community.

Mini-grid installation in 2024



40 kWp  
Solar power plant



80 kWp  
Solar power plant





SUPPORT TO PRODUCTIVE USERS OF ENERGY IN MINI-GRID LOCATIONS

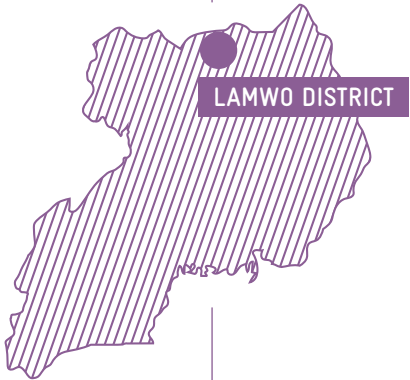
BUSINESS TRAINING OF PRODUCTIVE USERS OF ELECTRICITY

AVSI Foundation was selected by ESDS to provide support to productive users of electricity in Lamwo District. After a business ideas competition among micro and small businesses located within the mini-grid locations, 103 female and

male refugee and host community business owners were trained in business and financial skills. Of these approximately 80 are considered for a matching grant to support their purchase of electric appliances and equipment.



Photo credit: AVSI Foundation



LAMWO DISTRICT

Activities carried out between 2022 and 2024

80 Beneficiaries  
from the matching grant scheme

50 Refugees  
(30M|20F)


30 Hosts  
(22M|8F)



PALABEK REFUGEE SETTLEMENT AND SURROUNDING HOST COMMUNITIES







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