Photo Credit: IRENA

UNHCR GREEN FINANCING FACILITY: LESSONS FROM SOLARISING HUMANITARIAN INFRA-STRUCTURE IN DISPLACEMENT SETTINGS

About SUN-ESDS

Energy Solutions for Displacement Settings (SUN-SUN-ESDS) is a component of the Global Programme with UNHCR (SUN), which is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The Global Programme supports UNHCR in facilitating the operationalisation of the Global Compact on Refugees (GCR) in the Humanitarian-Development-Peace (HDP) Nexus. Its core mission is to address pressing energy challenges faced by populations affected by displacement. By focusing on the integration and deployment of reliable, clean, and sustainable energy solutions, SUN-ESDS aims to enhance the quality of life, well-being, and environmental conditions of affected communities. The project is instrumental in supporting the wider humanitarian, development and peace community in meeting the objectives of the Global Compact on Refugees (GCR).

Tackling the twin crisis of climate change and human displacement

UNHCR is addressing the intersecting challenges of climate change and human displacement by advancing sustainable energy solutions. As part of its efforts, UNHCR is working to green its operations and promote clean energy transitions, recognizing the critical link between environmental sustainability and humanitarian action.

In 2019, UNHCR emitted 97,136 tons of CO_2e[1], with over 60% of emissions originating from it's offices, many of which are remote field offices relying on diesel generators due to limited or unreliable electricity grids. A Sida-commissioned study found that transitioning to solar energy could significantly reduce emissions and operational costs. This led Sida to provide $4 million in seed funding to establish UNHCR's Green Financing Facility (GFF).

1 Transforming into a Green UNHCR (Factsheet as PDF)

The GFF supports clean energy projects in climate-vulnerable, energy-deficient areas, aligning with UNHCR's Global Strategy for Sustainable Energy 2019–2025. However, challenges such as high upfront costs, limited technical expertise, and maintenance hurdles must be overcome to ensure the sustainability of photovoltaic systems. Despite these obstacles, solar energy offers a cost-effective and reliable pathway to tackle the twin crises while reducing the environmental footprint of humanitarian operations.

UNHCR aims to facilitate a change to the entire humanitarian-development-peace nexus by meeting the challenge created by the twin crises of climate change and human displacement. As part of its commitment to meeting these objectives, UNHCR aims to set a positive example to green its own operations and to proactively develop models for sustainable clean energy transition.

Implemented by:

In cooperation with:

Designing the GFF Approach

The **Green Financing Facility (GFF)** was designed with a twofold approach to address both technical and financial barriers to UNHCR's renewable energy transition. On the technical side, GIZ provided critical expertise to bridge resource and knowledge gaps within UNHCR. This included deploying technical experts to support UNHCR operations in Kenya, Ethiopia, and Uganda, collaborating closely with UNHCR energy teams to conduct site assessments, develop business cases, and establish legal agreements with private sector partners. Over time, this cooperation built internal capacity within UNHCR, enabling a gradual transition of responsibilities to its staff.

On the financial side, GFF tackled the challenge of high upfront costs for solarization projects, which are a significant barrier for UNHCR. Initiated with funding from Swedish SIDA and later co-financed by German BMZ, the GFF introduced an innovative financing mechanism. The GFF offers two methods of support. Firstly, through a guarantee mechanism that de-risks long-term power purchase agreements (PPAs) with independent power producers (IPPs), derisking the long term agreements and addressing internal budget constraints that limit upfront investment. Secondly, providing a revolving fund type of approach in which the GFF funds the upfront capital to deliver the system and the offices pay annual lease payments for its use.

By generating revenue through leasing and reinvesting in renewable energy systems, the GFF ensures sustainable operations while reducing financial risks and supporting UNHCR's shift to clean energy.

To date, GFF activities have expanded beyond the initial regions, with 88 UNHCR offices assessed and nine systems now operational. While challenges in entering solar agreements required adaptations to the approach, the GFF remains a vital tool for advancing renewable energy transitions in humanitarian contexts.

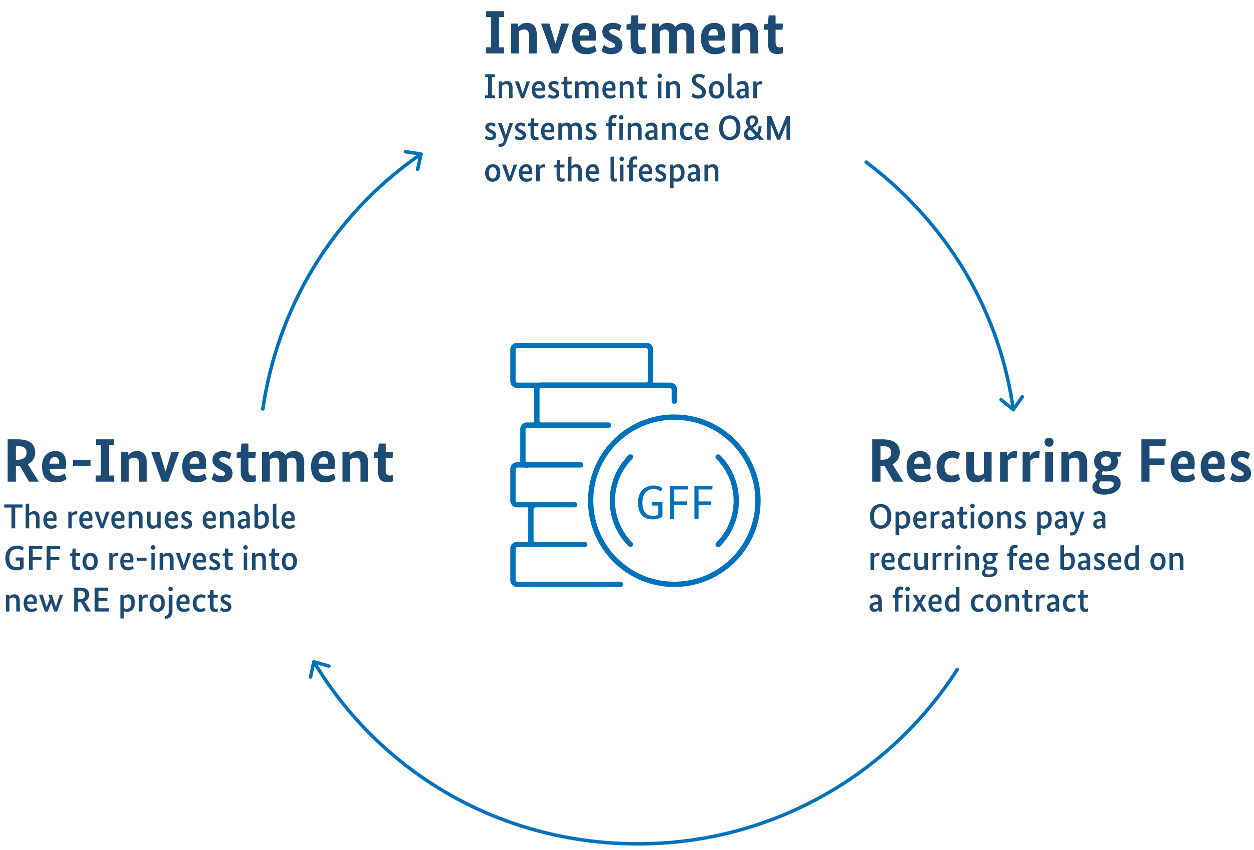


Figure 1 Revolving fund mechanism of GFF

Challenges and Lessons Learnt

The Implementation of the GFF Model in Uganda, Kenya, and Ethiopia provided valuable learnings for future implementation and adaptation. Specifically, in Kenya, two projects were awarded to two different and established companies, however they struggled to secure and maintain competitive finance from lenders and led to significant delays and retendering.

In Ethiopia, a challenging regulatory environment created significant delays contributing to a change in the project viability under the chosen approach. The implementation of the GFF model revealed key challenges tied to market limitations in the private sector and regulatory frameworks.

Regulatory Frameworks:
Entering Power Purchase Agreements (PPAs) or similar agreements with Independent Power Producers (IPPs) requires supportive national regulations. In Kenya, for instance, the framework at the time required tariff approval by the regulatory authority necessitating an adaptation to a leasing model for UNHCR projects.

Private Sector Financing and Expertise:
IPPs acting as project developers under a Build-Own-Operate (BOO) model need access to long-term financial instruments (a challenge as seen e.g. in Dadaab, Kenya), such as competitive loans, to sustain operations until revenue from electricity sales materializes. Additionally, private sector actors often lack the expertise to prepare bankable projects or competitively calculate project lifecycles, posing further obstacles.

To address these challenges, the GFF developed tailored business models:

For large-scale projects, UNHCR entered long-term lease agreements with private sector IPPs, who undertake upfront investments and lease assets to UNHCR. A guarantee mechanism was introduced to de-risk early contract terminations, ensuring competitive pricing over 10 years.

For smaller projects, a revolving fund model was established, where GFF owns and operates the solar installations, leasing them to UNHCR country operations. Suppliers are contracted under an Engineering, Procurement, and Construction (EPC) framework.

As GFF evolved, it shifted its focus from de-risking to asset ownership Currently, GFF develops, procures, owns, operates, and maintains solar installations for UNHCR, leasing them to local UNHCR entities while managing their entire lifecycle, including decommissioning and recycling. This approach not only ensures long-term functionality but also contributes to reducing e-waste and promoting sustainable recycling practices.

Achievements and Initial Impacts

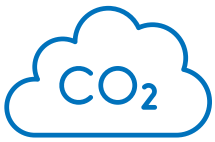
The GFF had some unique achievements – not only as a fund but also as a project in the HDP Nexus. It is a lighthouse project for sustainably financing RE projects in the context of Humanitarian Aid in protracted crisis.

As a fund, the GFF most probably was the first fund within a Humanitarian Aid organization to actively invest and manage renewable energy assets and therefore to overcome shortcomings of the private sector with a market-based approach. GFF compensates for market shortfalls and for UNHCR it mitigates the risks of investments in PV projects.

As GFF acts as asset owner and manager, it also oversees Operation and Maintenance (O&M) services. This limits the shortcomings in O&M due to lack of resources (qualified staff and financial constraints) on the level of the local UNHCR operation (country or sub-office). GFF becomes an intermediary between the operational entities of UNHCR and the supplier entering multi-year contracts with both.

30 project contracts

In figures, GFF was able to award more than 30 project contracts by mid-2024. Resulting in a forecast annual reduction of more than 6,000 tons of CO_2 equivalents and UNHCR has the potential to save up to 1.3 Mio USD per year of operational costs.[2]



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2 data as reported by the Green Financing Facility, September 2024

Best Practices and Sustainability Aspects

UNHCR reflected the need for the transition to renewable energies in its Global Strategy for Sustainably Energy 2019-2025. The strategy defined five outcomes, two of which directly addressed the electrification of community facilities and UNHCR infrastructure. GFF therefore is aligned UNHCR's strategic framework.

Transitioning to renewable energy in humanitarian aid goes beyond technological solutions – it necessitates operational changes and a shift in mindset. Recognizing this from the outset, UNHCR established a dedicated organizational structure in the form of a special fund. This fund enables investments in renewable energy projects outside the constraints of the annual operational budget, ensuring sustainable, long-term financing for such initiatives.

Two positive outcomes from the GFF approach are:

Since its inception, GFF was **backed by UNHCR's top management.** Establishing a revolving fund to finance, own and operate energy assets requires support from the top management as certain frameworks and regulations within UNHCR needed to be adapted to enable GFF to act as a fund the way it was designed. The support thus created the operational freedom for the fund management to effectively invest and operate the assets.

Furthermore, the GFF proves the case for an **alternative approach in supporting infrastructure initiatives** in displacement contexts, where, instead of providing finance to the entire project, the donors have the option to become accelerators by providing the seed money, enabled by a self-sustaining structure of the GFF. This potentially adds to the impact of renewable energy initiatives funded in this context, realizing results beyond the scope foreseen under the initial grant.

To this end, the GFF offers a distinctive approach of enabling the private sector in the delivery of sustainable energy services in displacement settings, where established market players are not active.

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Address:
GIZ Bonn
Friedrich-Ebert-Allee 32 + 36, 53113 Bonn
E info@giz.de
I www.giz.de/en

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Author:
Thomas Gross (Be Development)

Responsible:
Björn Euler (SUN ESDS) & Cleo Forster (UNHCR)

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