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Financial guarantees for humanitarian energy: examples, incentives, and disincentives

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Contents

Key Messages

- **Access to and provision of energy in humanitarian settings requires complete transformation. Access is severely inadequate, and the limited sources available are carbon intensive. Most forcibly displaced people lack access to modern and clean energy sources. Humanitarian operations rely heavily on diesel, creating high costs, emissions, and operational inefficiencies.**
- **Private-sector finance, which is essential for such transformation, is put off by high perceived risks in humanitarian settings. Refugee contexts are seen as impermanent, and refugees are viewed as having low-credit worthiness – despite the long-term nature of many refugee communities, their clear and growing demand for energy, and the strong evidence of very high repayment rates.**
- **Some evidence suggests that financial guarantees can work effectively for humanitarian organizations – though the viability for refugee households and businesses remains a question because of a lack of studies. Financial sustainability is a challenge, and the full economy of guaranteed investments is still unclear.**
- **Enhancing understanding the potential impacts of financial guarantees for humanitarian energy over the long term requires targeted research. Analysis should examine the commercial viability of such mechanisms and how the finance system for refugee energy may become self-sustaining. Most current mechanisms remain donor dependent. Guarantees are typically packaged with subsidized fees and grant-financed technical assistance, so the full cost of market-building must be accounted for alongside the guarantee itself.**

Introduction

Humanitarian energy and financial guarantees

An estimated 120 million people have been forcibly displaced worldwide, with more than 80% of them hosted in low-income countries (UNHCR, 2024). Displaced populations may grow rapidly as the climate crisis worsens, with climate impacts acting as a threat multiplier for migration and displacement (UNHCR, 2023a). Climate change already disproportionately affects forcibly displaced people, particularly where fragile and conflict-affected conditions serve to amplify climate vulnerability (Nyakerario & Mirumachi, 2022). Humanitarian organizations that seek to respond to the complexities of climate change are facing ever changing political and climate conditions in what many have referred to as the "new normal" of protracted and complex crisis (Sova, 2018). At the same time, funding cuts for humanitarian aid have substantially diminished the capacity of humanitarian programs focused on sustainable energy and climate action (IRC, 2025).

Most forcibly displaced people and refugees live without access to modern energy. An estimated 94% of forcibly displaced people living in camps do not have meaningful access to electricity, and approximately 81% lack anything other than the most basic fuels for cooking (Grafham, 2022). The power supplied in refugee camps often comes from fossil fuels. More than 11 000 diesel generators are still in use by humanitarian operations, which spend more than USD 100 million annually on fossil fuels that emit almost 200 000 tonnes of CO_2 (Sandwell et al., 2022). Much must be done to transform

this picture, to enable all displaced people and the humanitarian system to have access to renewable, affordable and reliable energy (UNITAR et al., 2021).

Private-sector collaboration and investment for humanitarian finance have been touted as the solution to many of the problems faced by humanitarians (World Economic Forum, 2025). Private finance can help fill the widening humanitarian finance gap. Private-sector businesses, in partnership with the public sector and non-governmental organizations (NGOs), can offer streamlined processes, efficient and standardized solutions, innovative financial modalities, and technological innovations at lower cost than humanitarian aid agencies (Bruder & Baar, 2024; Van Landeghem, 2016). The private sector can also be viewed as a neutral party in highly complex political environments.

However, there are many challenges with private-sector involvement in the humanitarian sector (World Economic Forum, 2025). The potential incentives and disincentives for private investment in the humanitarian sector are poorly understood. Refugee populations are seen as a risky market. Their limited financial resources, lack of collateral and lack of permanence in host countries could impact their ability or willingness to repay loans. As a result, private lenders are often reluctant to extend credit to refugee entrepreneurs starting a business (Kiva, 2025). Similarly, external private-sector actors attempting to serve forcibly displaced populations are facing difficulties in attracting financing and investment, impeding their ability to start and scale up their activities (Elasu et al., 2025).

New evidence is therefore needed to demonstrate how private finance and investment can deliver financial support for vulnerable populations and enable sustainable energy partnerships (Reichert & Farber, 2024; Rouse, 2019).

There are two different overarching modalities by which the private sector can engage in humanitarian assistance. First, private-sector businesses can engage directly with forcibly displaced people with appropriate affordability support (Mutiso, 2019). For example, businesses can sell energy products or services in refugee camps. Second, the private sector can identify market opportunities that align with the goals of donors and humanitarian organizations. For example, the private sector can provide philanthropy or market-based support within humanitarian programming.

Within this context, financial mechanisms are being explored that can catalyse financing from the private sector. Blended finance structures typically use catalytic capital, such as development or philanthropic grants or concessional funds, to attract commercial capital through de-risking (Garbacz et al., 2021). Financial guarantees have emerged as one of the primary mechanisms to open lending channels and reduce risks faced by the private sector. A financial guarantee is a commitment by a third-party guarantor to cover the debt obligations of a borrower in the event of default, thereby reducing the lender's credit risk (Cohen & Patel, 2019). Such guarantees have proven to be an effective instrument for mobilizing private-sector finance because a portion of risk is transferred to a third party – in development contexts, typically a public entity (Garbacz et al., 2021). While the use of blended finance and guarantees in development cooperation is increasing, such use is nascent in humanitarian settings. And, while some research has been conducted on financial services for refugees (Betts, 2021),

the role of financial guarantees in humanitarian settings has yet to be fully explored in academic literature (Bruder & Choi, 2025; Rosenberg-Jansen, 2022a).

This SEI Working Paper provides an analysis of illustrative examples of such use and describes challenges, incentives and disincentives to demonstrate how financial guarantees may be used within humanitarian energy contexts. It examines the following: 1) examples of the Green Financing Facility of the UN High Commissioner for Refugees (UNHCR), 2) the Global Guarantee Mechanism proposed by the Global Platform for Sustainable Energy in Humanitarian Settings (GPA), and 3) the potential application of guarantees from across the humanitarian sector to energy (GPA, 2021; UNHCR, 2023b). In doing so, the working paper contributes to the wider debate on effective levers that can finance sustainable development, suggesting how financial innovation can support investments to deliver the Sustainable Development Goals (SDGs) in humanitarian contents.

Understanding existing financial guarantees in humanitarian settings

Definitions and scope

Innovative humanitarian finance covers a range of mechanisms and approaches. These include grants, debt and equity instruments, blended finance (including guarantees), outcomes-based finance, insurance mechanisms, carbon finance and other financial models (IVCA, 2025). This paper focuses on guarantees, and it aims to provide a clear analysis on the role this mechanism can play in incentivizing investment in renewable energy in humanitarian settings.

The paper focuses on humanitarian energy, by which we mean “all the electricity, fuel, and energy technologies needed to provide power and supply cooking in refugee camps and for forcibly displaced people” (Rosenberg-Jansen, 2025b). We acknowledge that covering humanitarian actors working across a variety of displacement settings on renewable energy represents a broad remit. However, the number of organizations explicitly working on new financial and inclusion approaches is limited, and the humanitarian energy sector is still a relatively small one (Rosenberg-Jansen, 2020). Additionally, the scope of the research is bounded by focusing on innovative financing and guarantee mechanisms within the sector.

Box 1 provides definitions on the nature of guarantees in humanitarian contexts. Essentially, a financial guarantee is a commitment by a third party with a superior credit rating to cover in whole or in part the repayment obligations if the borrower defaults. Hence, all or a part of the credit risk is transferred, assuring the lender that its investment will be repaid to the amount specified by the guarantee agreement. This in turn encourages lenders to provide financing in the first place because their risks are sufficiently reduced. Thus, they can extend credit to firms or projects that may not otherwise meet their risk-return criteria because they are not seen as a stable or secure. Renewable energy investments are particularly suited for guarantees

due to their capital-intensive nature, front-loaded capital profile, and long useful life. Renewables are one of the sectors benefitting most from blended finance in development contexts, due to the comparatively strong business case for investment in energy (Iyer & Vaze, 2024).

BOX 1. GUARANTEE DEFINITIONS

Guarantees are a form of credit enhancement, by which a separate entity promises to cover repayments on loans or the interest (or both) if a borrower cannot meet its payment obligations. Guarantees can be provided, for a fee, to the lender, by development finance organizations (DFIs), government agencies, bilateral organizations, or multilateral banks. The fee may or may not be subsidized. Under the concept of a financial guarantee, a public guarantor assumes a portion of credit risk, thereby facilitating lending to high-risk borrowers to enhance investment viability in risky contexts for commercial actors (Bruder & Choi, 2025, p2). Guarantees are viewed as “protection from various forms of risk intended against capital losses for investors" (Farber et al., 2024, p13). Guarantees come in different forms. Funded guarantees require capital to be set aside upfront, while unfunded guarantees require disbursement only if a borrower defaults. This makes them attractive as a de-risking tool. However, even unfunded guarantees represent a real contingent liability for the guarantor. Guarantees also differ in how losses are shared. For example, under a pari passu arrangement, the guarantor covers an agreed proportion of every loss, so the lender always retains exposure. By contrast, under a first-loss arrangement, the guarantor absorbs the initial tranche of losses in full before the lender is exposed.

In humanitarian energy contexts, this means that different types of borrowers can be covered if they do not meet the repayment obligations. For example, guarantees can benefit energy companies by reducing the risk that their costs would not be recovered if humanitarian organizations ended energy contracts – a situation that could otherwise leave energy companies with a financial burden. Guarantees can benefit humanitarian organizations such as UNHCR by enabling long-term energy contracts, which go beyond the usual yearly funding cycles of humanitarianism. A financial guarantee for humanitarian organizations ensures that funding will be provided to cover costs to energy companies if the humanitarian situation changes.

Guarantees for renewable energy for humanitarian organizations and refugee businesses

Currently, guarantees for renewable energy in humanitarian settings can be used as part of energy-as-service contracts. Under such an arrangement, an energy company provides renewable energy as a service to a humanitarian operation, using commercial finance that is underpinned by a guarantee to fund the investment. Service models work by providing electricity or by leasing power equipment to an organization. Under such arrangements, the energy company still owns and operates the energy technology, but it supplies the electricity to customers directly (Fell, 2017). Because the electricity supplier assumes these responsibilities, the humanitarian organization does not have to worry about operation or maintenance of the technology. For cooking fuel needs, the energy service model is more complicated because cooking technologies vary considerably. However, the same model can be used for gas supply or cooking technologies (Bisaga & To, 2021). Currently many humanitarian operations do not use this model and instead own energy assets directly. That is, for example, they tend to own the diesel generator powering their facilities, rather than using a service model and paying for energy. Humanitarian organizations are generally not as effective at owning and operating power infrastructure as energy companies, which creates inefficiencies and management challenges within UN systems (Grafham & Lahn, 2018).

Energy service models are common in other development contexts, where energy companies believe in the stability of the customer and the duration of the investment – usually around three to five years (Cleary & Karen, 2019). However, in the case of humanitarian organizations – even large-scale ones such as the UNHCR or the World Food Programme (WFP) – such stability is not certain. This is due to the constraints of annual budget cycles. Humanitarian organizations operate with funds contributed yearly by donors, and so they often cannot commit to multi-year projects or contracts (IVCA, 2025). Similarly, humanitarian organizations face considerable uncertainty around operational demand. A prevailing perception is that refugee camps could close or move with little notice (Devictor & Do, 2017) and, therefore, that energy investments could be abandoned.

Such constraints and uncertainties have been major obstacles for private-sector companies investing in renewable energy in displaced settings (Cohen & Patel, 2019). As a result, private-sector investment in humanitarian energy has struggled to materialize – even though there are substantial positives for both the private sector and for humanitarian agencies, which could gain by avoiding high diesel fuel costs, and reducing greenhouse gas emissions (and related, negative health effects) by switching to renewable energy sources (Grafham & Lahn, 2018).

Such guarantees have the potential to work well for businesses, humanitarian organizations and, crucially, for refugees themselves. For example, the arrangement could benefit refugee entrepreneurs, who run their own businesses in refugee camps supplying renewable energy directly to their communities (Rosenberg-Jansen, 2019). Humanitarian financial-inclusion programs are often non-sector specific in terms of the businesses they can support. However, due to the complexity of the humanitarian energy sector, these businesses often struggle to access financing (GPA, 2022; Last Mile Climate, 2025). If supported with inclusive finance, refugee-led businesses can expand to supply more

energy to refugee end-users – including other refugee businesses, households, and community facilities within refugee camps.

The following section provides an analysis of guarantee mechanisms in humanitarian settings. It should be noted that most examples are at a relatively early stage, with the earliest starting in 2019. Thus, long-term impact analysis of the results of these mechanisms is not yet available, and further analysis and impact assessments will be needed to provide the full picture on the difference that guarantee mechanisms can make in ensuring the renewable energy transition in humanitarian settings. At the same time, however, initial reporting is positive and demonstrates clear potential for guarantee mechanisms. Throughout the examples, it is important to consider *who* receives a guarantee, and what mechanisms are used to support different institutions and individuals.

BOX 2. HUMANITARIAN SPACES VERSUS REFUGEE SPACES: PROVIDING GUARANTEES FOR WHOM?

How is energy provided in refugee camps? Where is energy is provided within them? These are complex matters. There is no systematic provision of energy, nor is there a global governance mechanism to regulate how energy is supplied (GPA, 2022). Electricity for humanitarian operational facilities (such as offices, housing compounds, and food and registration centres) often comes from diesel generators or grid connections. By contrast, refugee community facilities (such as schools, hospitals, playgrounds, and community centres) receive limited connections that depend on funding from NGOs or humanitarian organizations to supply energy. Moreover, refugee homes and businesses receive firewood or cooking fuel but often do not have access to electricity. This picture differs considerably across different geographies. For example, humanitarian energy provision is quite different in Jordan, Kenya and Bangladesh (GPA, 2025b). However, this general pattern – with humanitarian organizations receiving electricity, and refugee homes, businesses, and community facilities going without – is overwhelmingly common (Rosenberg-Jansen, 2024).

In the context of financial guarantees, this distinction matters a great deal. For humanitarian settings, widely different entities are the end users of energy and the sources for payment of energy costs and the loan. This is because of differences in the types of end -users: those who are responsible for paying energy costs and repaying the (guaranteed) loan. For example, for the case of humanitarian operations, these responsibilities are borne by the humanitarian organization. For refugee community facilities, an NGO, humanitarian agency, or the local government may be responsible. But for refugee homes and businesses, by contrast, financial responsibility would lie with individual refugees themselves. Therefore, the entity that is the subject of the guarantee differs markedly. In theory, it is much easier to guarantee one or two humanitarian agencies (which also have financial records and substantial experience managing money), than it is to assess hundreds or even thousands of individual refugee businesses or households for loan viability. Nevertheless, in practice, the realities of providing guarantees even to established agencies in humanitarian settings are challenging. The implications of this are explored within the discussion section.

Evidence and mechanisms

Illustrative example: the Green Financing Facility of UNHCR

Rationale: UNHCR reports that it generates emissions of 54 940 metric tons of CO_2 equivalent (tCO_2eq) every year. These emissions largely stem from diesel used to power office infrastructure and from other fossil fuels used for vehicles and air travel (UNHCR, 2025). In 2019, the UNHCR created the Green Financing Facility (GFF) to decarbonize some of its 545 offices worldwide. The aim was to switch its diesel generator-powered offices and fossil fuel-powered grid infrastructure to solar power. The GFF was designed to mitigate risk and act as an internal guarantee mechanism and debt facility to enhance the creditworthiness and attractiveness of transitioning operations to renewable energy. UNHCR reports that this mechanism is likely to be 60% more financially efficient than relying on grants from donors (UNHCR, 2025).

Funding Model: The GFF has an initial investment target of USD 60 million dollars, of which it has raised more than USD 36.5 million so far (ODI, 2024). Investors have financed 40% of this based on UNHCR guarantees to de-risk long-term renewable energy contracts in fragile settings (ODI, 2024). The Swedish International Development Cooperation Agency (Sida) provided the initial seed funding of USD 4 million, with the German Ministry for Economic Cooperation and Development (BMZ) and the IKEA Foundation providing additional funds (GIZ, 2024). The total estimated funding need for the GFF is estimated to be USD 115 million of green capital expenditure over 10 years (UNHCR, 2025).

Guarantee mechanism: The GFF works as a provider of an internal guarantee for UNHCR country offices. (GIZ, 2024). For large-scale projects, UNHCR has long-term lease agreements with the private sector, which supplies renewable energy by undertaking upfront investments and then leasing these energy assets to UNHCR. It thereby transfers and mitigates financial risks associated with UNHCR offices' long-term power-purchase agreements with independent power producers and energy companies. This reduces the financial exposure faced by private energy suppliers. This in turn lowers the cost of long-term contracts and reduces internal budget constraints within UNHCR that limit upfront investment The guarantee mechanism shifts the financial consequences of early contract termination away from private providers and ensures competitive pricing over 10 years (GIZ, 2024). Figure 1 provides a visual summary of the guarantee mechanism.

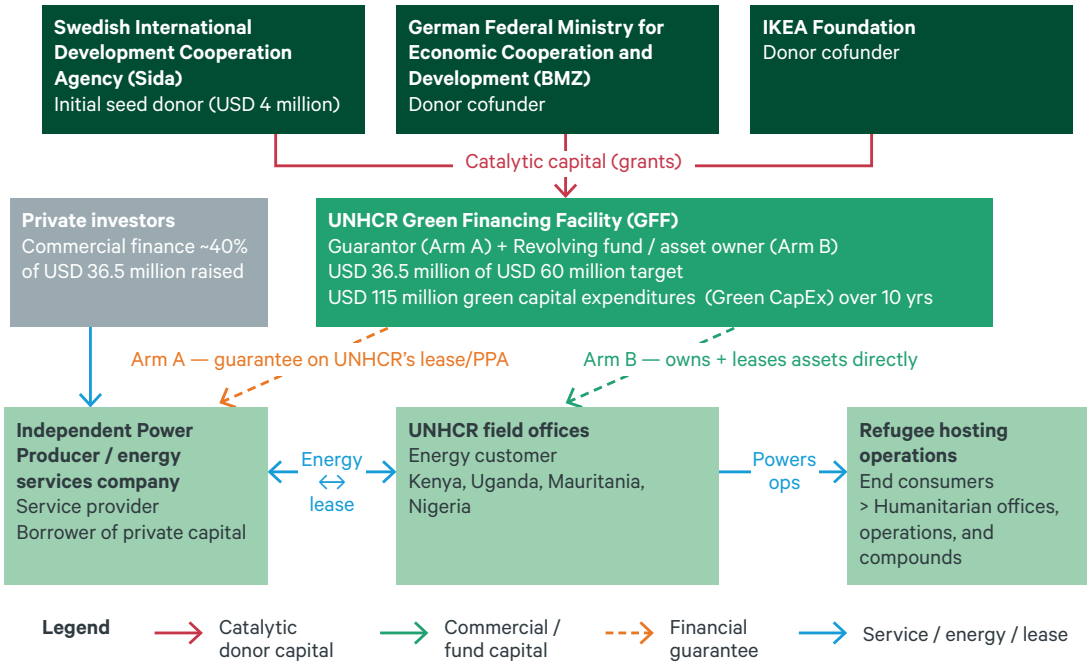
Results and locations: The GFF has awarded more than 30 project contracts. These have led to annual reductions of more than 6000 tons of tCO_2eq and the potential of up to USD 1.3 million per year in operational savings (GIZ, 2024). This approach has led directly to decarbonizing humanitarian operations, saving costs and reducing emissions. GIZ reports to date that 88 offices have been assessed and 9 solar systems are now in operation (GIZ, 2024). Large flagship investments in Kenya (Kakuma) and Uganda (Adjumani and Yumbe) provide humanitarian aid to more than 650 000 displaced people (UNHCR, 2023c). Meanwhile, in West Africa, six solar systems funded by the GFF have been installed in Mauritania (offices and guest houses in Nouakchott and Bassikounou) and in Nigeria (offices and guest houses in Abuja, Lagos and Ogoja) (Argibay & Varga, 2025). In Mauritania and Nigeria, UNHCR local operations used the

GFF to purchase and install solar systems from private-sector energy companies, with a financial guarantee underpinning the agreement of the UN operations to lease the assets from companies once they start to provide energy. Lease payments are fixed for the next 10 years, with expected diesel savings of 24 000 litres a year in Mauritania and 203 500 litres a year in Nigeria (Argibay & Varga, 2025).

Outlook: The full financial sustainability of the GFF is unclear. The fund has only been operational since 2019. However, some challenges have already emerged. For example, GIZ reports that "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" (GIZ, 2024, p3). This may suggest that a fully private-sector approach is not yet feasible because the facility continues to own and operate the energy assets on behalf of UNHCR. Especially as some private-sector actors have struggled to secure and maintain competitive finance from lenders. This issue warrants further research to understand how and why this may be the case.

Figure 1. UNHCR Green Financing Facility (GFF)

An internal facility operating two parallel arms:
Arm A – a guarantee mechanism backing long-term lease/power purchase agreement (PPA) contracts
Arm B – a revolving fund that directly buys, owns and leases solar assets to UNHCR offices



Sources: UNHCR (2023, 2025); GIZ (2024); ODI (2024); Argibay & Varga (2025).

Illustrative example: The guarantee mechanism of the Global Platform for Action on Sustainable Energy in Displacement Settings

Rational and funding: The Global Platform for Action on Sustainable Energy in Displacement Settings (GPA) is an initiative to promote actions that enable sustainable energy access and use in displacement settings (UNITAR, 2018). As part of its work to reduce barriers to sustainable energy access in refugee camps, GPA has undertaken an analysis of the viability of financial guarantees and long-term contractual arrangements (GPA, 2025a). This work has cumulated in the Decarbonising Humanitarian Energy (DHE) Programme – jointly run by NORCAP (part of the Norwegian Refugee Council), the UN Institute for Training and Research (UNITAR), and the UN Development Programme (UNDP) as part of the DHE Multi-Partner Trust Fund (DHE-MPTF). The GPA work highlights that most electricity for organizations in displacement settings comes from diesel generators – with estimates showing costs of more than USD 100 million and emissions of more than 200 000 tCO_2eq (Sandwell et al., 2022, p1). The German Federal Foreign Office has committed EUR 22 million to the DHE-MPTF.

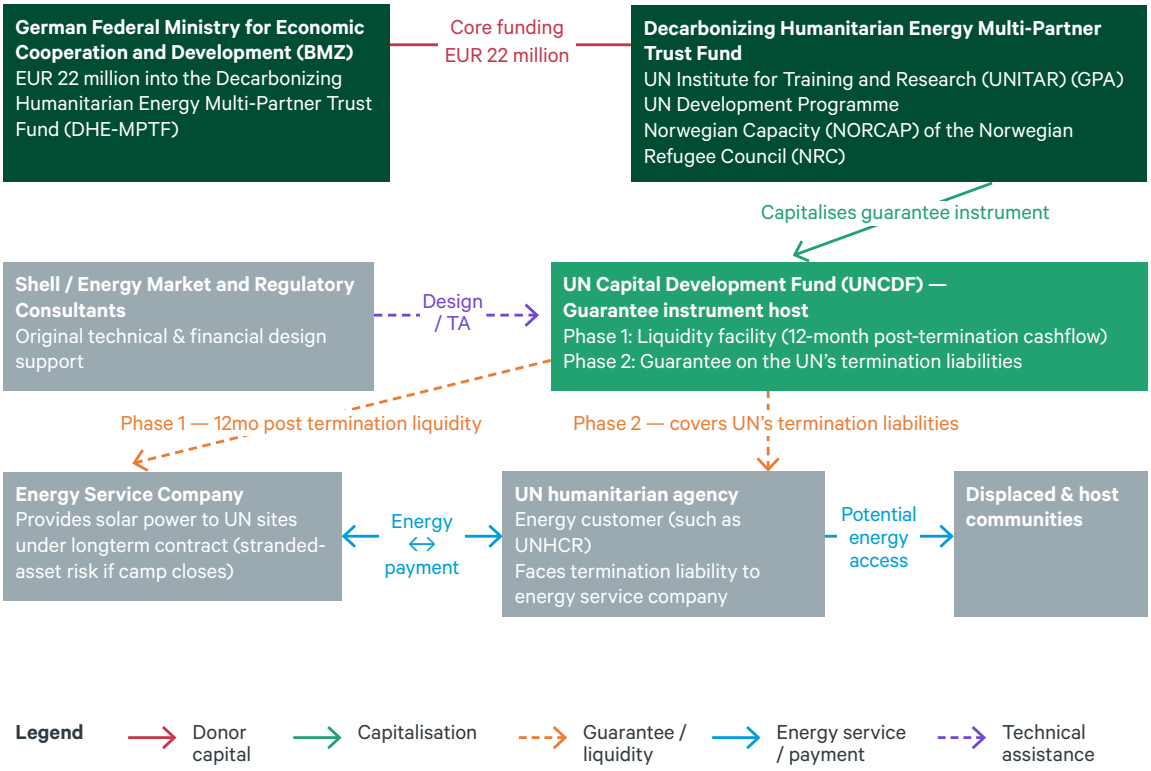
Guarantee mechanism: The GPA de-risking mechanism has two core elements. 1)A short-term funding liquidity facility provides financing for greening humanitarian operations. If a refugee camp were to close (and, thus, no longer in need of energy), the facility would offer a one-year window to cover the costs of the service provider while it looks for other buyers of the energy or the equipment (GPA, 2025a, p2). 2) If the provider cannot find any such buyers, the guarantee covers the payments that the humanitarian organization must make to the service providers to compensate them for the termination of the project.

Results and locations: Currently, the fund focuses on the Sahel region, with Niger and Nigeria identified as the first priority countries. In 2024, it began piloting the Centralised Clean Energy Service in Nigeria (GPA, 2025a). Progress on the de-risking mechanism has been slow, hindered by staffing challenges and UN budget constraints (GPA, 2024). In addition, a key difficulty in creating a guarantee was that the existing partners had financial rules that prevented the creation of reimbursable instruments and risk-transfer mechanisms. Indeed, the UN Capital Development Fund (UNCDF) was identified as the only UN agency with the capacity to develop de-risking instruments of this type (GPA, 2024).

Outlook: To date, very little publicly available information on the progress of the GPA guarantee mechanism is available, making independent assessment difficult. Challenges with staffing and UN funding rules appear to have delayed implementation substantially, and, as a result, the guarantee element appears to have had limited impact to date. A number of assessments have been conducted and monitoring technologies have been installed, while ongoing work continues to decarbonize facilities. Further research is needed to understand both the viability of a guarantee housed within UN organizations and, down the line, the impacts of using such a guarantee mechanism. Importantly, the GPA mechanism is focused solely on energy used *within* humanitarian operations themselves. Establishing a way provide energy or guarantees to refugee households and businesses is not yet embedded within the mechanism. This may become possible with strategic redevelopment of the mechanism.

Figure 2. GPA Global Guarantee Mechanism (Decarbonising Humanitarian Energy) Global Platform for Action (GPA)

A two-phase de-risking mechanism designed by GPA / Energy Market and Regulatory Consultants. It consists of a 12-month, post-termination liquidity facility for the energy service company (Phase 1), plus a guarantee covering the UN agency's termination liabilities to the energy services company (Phase 2).



Sources: GPA (2021, 2024, 2025a); UNDP MPTF (2024); UNITAR / NORCAP. Implementation progress to date has been limited.

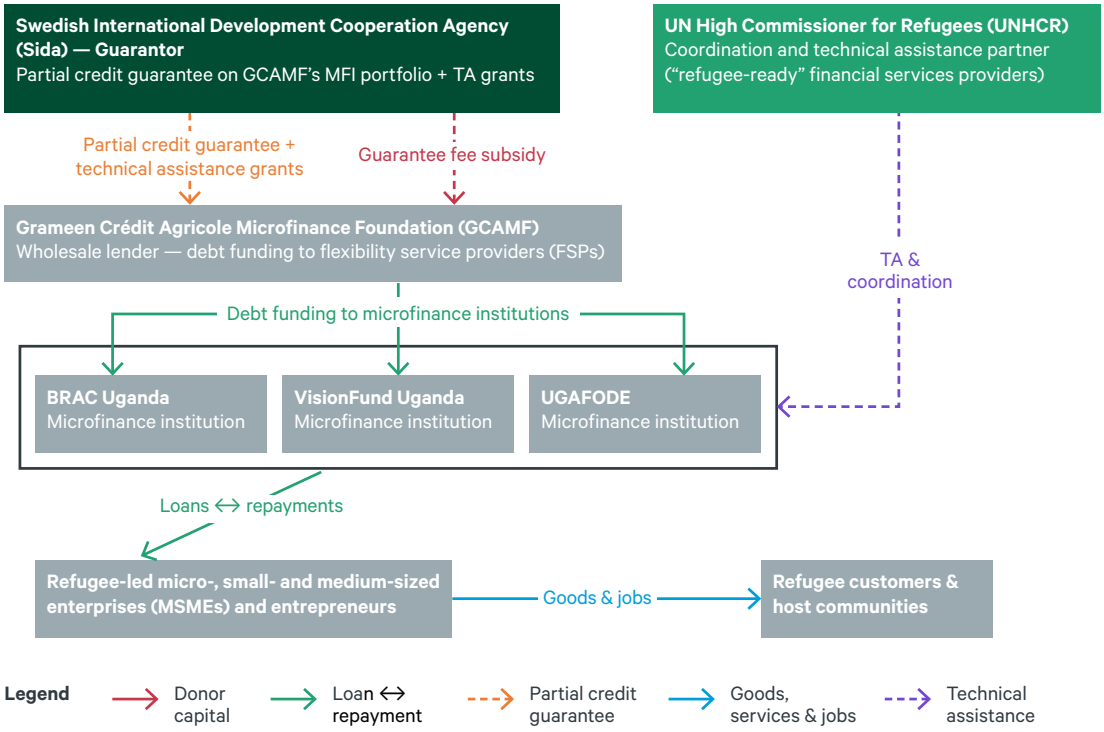
Financial inclusion: examples from non-energy-specific guarantee funds

The financial inclusion literature points to significant benefits from expanding financial services to displaced communities. Such benefits include business growth, increased resilience and improved quality of life (Easton-Calabria & Omata, 2016). Several financial guarantee programs exist for refugee communities. One example is the Grameen Crédit Agricole Microfinance Foundation (GCAMF) Refugees Financial Inclusion Guarantee Program (OpenAid, 2024). In the program, Sida provided a 50% credit guarantee to the foundation, which, in turn, provided debt funding to three microfinance institutions in Uganda willing to lend to refugees; full cover was initially proposed but cost concerns led to the 50% guarantee level. The guarantee sat at the wholesale level. It covered the foundation's lending to the institutions and would have been triggered only if one of them failed to repay – in practice, only in the event of institutional distress. It did not cover losses on the individual loans made to refugees (Bruder & Choi, 2025. The program also provided grants for technical assistance. The pilot reached nearly 100 000 refugees and host-community members through branches established in camp. Repayment rates were high, between 95% and 96% (Bruder & Choi, 2025). A follow-up project was launched in late 2025, aiming to

further expand financial access to refugees. It no longer relies on a dedicated project guarantee but instead on debt funding and technical assistance only (Pantzer, 2025). This development suggests that the underlying business case is sufficiently attractive to be pursued without a guarantee for de-risking, and that the program has begun to achieve its market-building purpose.

Figure 3.GCAMF Refugees Financial Inclusion Guarantee Programme - Uganda (microfinance institution route). Grameen Crédit Agricole Microfinance Foundation (GCAMF)

The partial credit guarantee from the Swedish International Development Cooperation Agency (Sida) enables the GCAMF to extend debt to three Ugandan microfinance institutions, which then lend to refugee-led micro-, small- and medium-sized enterprises (MSMEs). Sida and the UN High Commissioner for Refugees (UNHCR) also fund technical assistance to make microfinance institutions "refugee-ready".

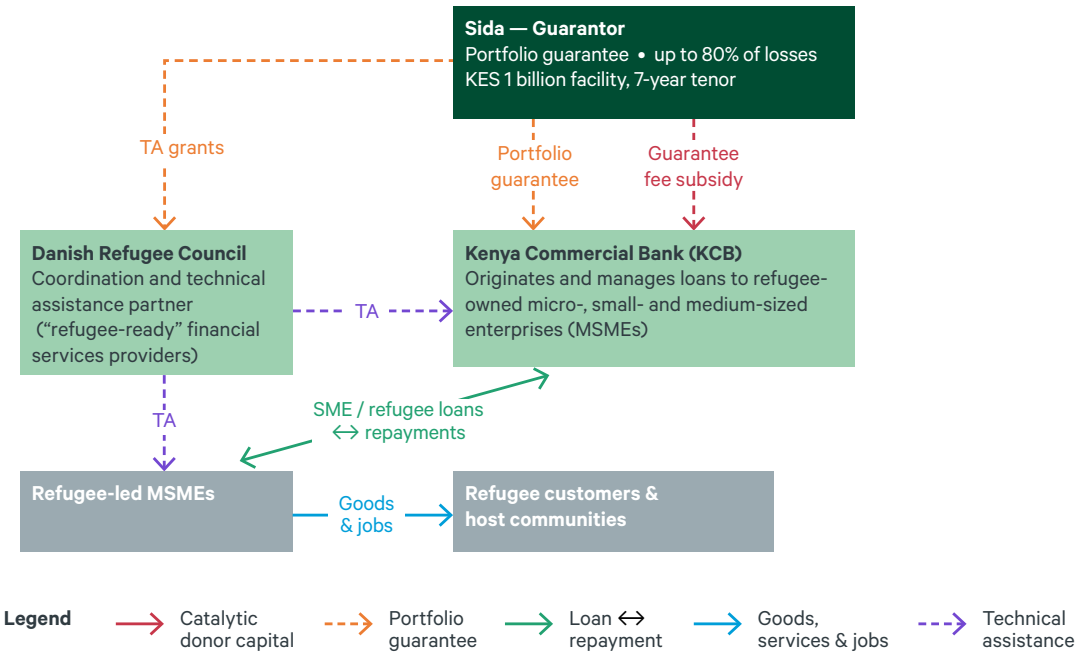


Sources: OpenAid / Sida (2024); GCA Foundation (Sida–UNHCR partnership); Bruder & Choi (2025); Pistelli & Guichandut (2024).

Another example of measures that aim to help refugee-led businesses is the Portfolio Guarantee Kenya to Support Refugee-Owned MSMEs (micro-, small- and medium-sized enterprises). Through this program, Sida established a portfolio guarantee to support refugee-led businesses, working through Kenya Commercial Bank (OpenAid, 2025), with Sida covering up to 80% of any losses on the guaranteed portfolio. The program was complemented by grant-financed technical assistance, delivered by the Danish Refugee Council. The guarantee fee was partially subsidized by Sida. Unlike the Ugandan arrangement, this guarantee attaches to the loan portfolio itself and pays out on loan defaults. This is the substantive difference between the two instruments. The bank focused on urban refugees, and it extended credit to host-community members alongside them to avoid perceptions of preferential treatment (Bruder & Choi, 2025).

Figure 4. Swedish International Develoment and Cooperation Agency (Sida) - Kenya Central Bank (KCB) Portfolio Guarantee - Kenya (direct bank route)

Sida provides a portfolio guarantee — covering up to 80% of defaults — directly to Kenya Commercial Bank, which then lends to refugee-owned micro-, small- and medium-sized enterprises (MSMEs). KES 1 billion (~USD 7 million) facility, 7-year tenor.



Sources: OpenAid / Sida (2025) – 'Portfolio guarantee Kenya Support Refugee owned MSMEs'; KCB–Sida announcement (2023); Sida evaluation (KCB and multiparty guarantees).

Both initiatives have successfully expanded financial service provision into previously underserved segments. Importantly, repayment rates are in line with those of comparable borrowers in host populations. The guarantee was never called in either program (Bruder & Choi, 2025). Thus, this approach has potential to tap a new market and offer a viable business case for lenders, even without guarantees. The multi-layered subsidy structure of both initiatives combines guarantees, subsidized fees, and grant-financed technical assistance. This underscores that guarantees alone are rarely sufficient, and that the full cost of market-building in humanitarian contexts needs to be accounted for. Currently these programs do not explicitly cover energy access. However, the portfolio guarantee is not sector specific, and so it could be expanded to support refugee-led businesses that provide renewable energy.

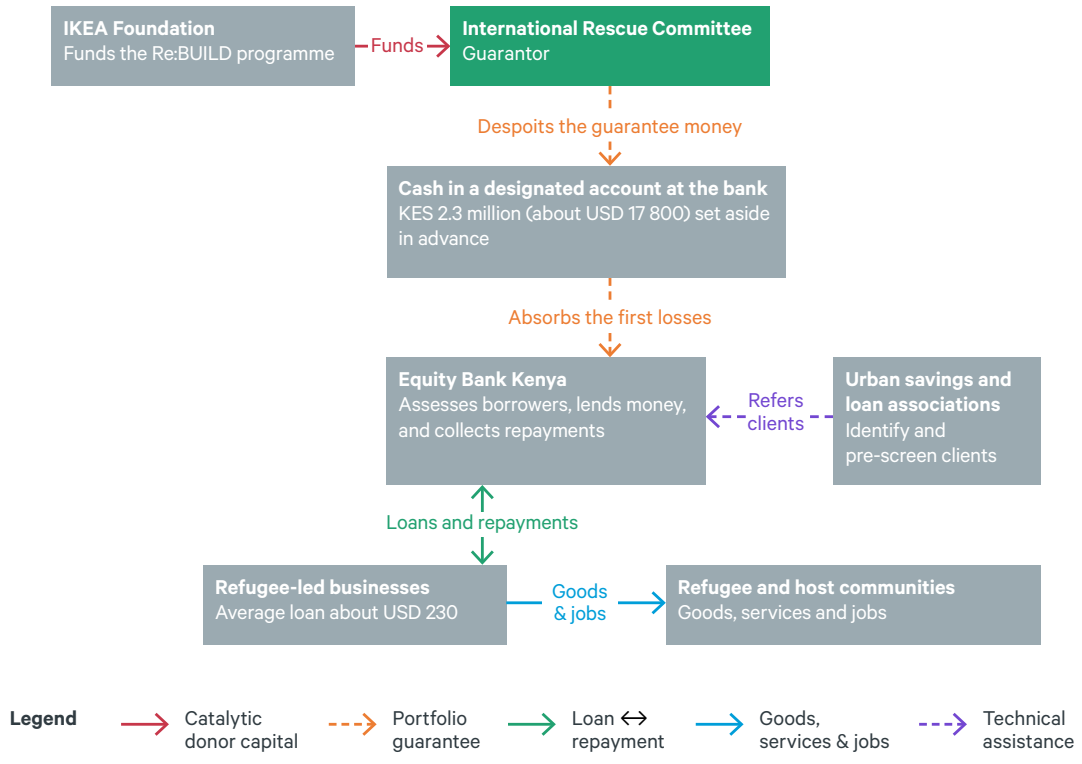
A third example is the Refugees in East Africa: Boosting Urban Innovations for Livelihoods Development (Re:BUiLD), a five-year set of investments funded by the IKEA Foundation. The program was managed by the International Rescue Committee (IRC). One component of the program focused on the development of a loan guarantee fund model in Kenya and Uganda (Maghanga et al., 2025). In Kenya, the program worked with Equity Bank Kenya to offer loans to urban savings and loan associations, de-risking Equity Bank Kenya's lending through a first-loss guarantee. Under this arrangement, the guarantor absorbs the initial tranche of default in full, so the lender is exposed only once losses exceed the first-loss thresholds. The IRC identified refugee clients from within the savings and loan associations and capitalized the guarantee

fund. Equity Bank Kenya conducted the due diligence on borrowers, and managed loans and repayments. Three features set this apart from the GCAMF and Kenya Commercial Bank programs: 1) The guarantor is an operational NGO committing its own funds rather than a bilateral donor agency. 2) The guarantee is funded, meaning cash is held in escrow in advance, rather than an unfunded contingent commitment. 3) It is first-loss rather than proportional. IRC deposited KES 2.3 million (approximately USD 17 000) into a designated account as guarantee. This level of financing was very low, as the initial project was a small pilot to demonstrate viability (Maghanga et al., 2025).

The pilot onboarded 297 clients, of whom 85% were refugees and 62% women, opened 1287 new bank accounts, and disbursed KES 4.3 million (approximately USD 30 000). Repayment reached 97%. Under the pilot, 135 businesses were started, and only USD 500 was drawn from the guarantee fund (Maghanga et al., 2025). Lending to refugee populations at Kenya Equity Bank has since scaled up significantly, with the institution moving from a cash-collateralized pilot of EUR 16 660 to a commercially structured facility 3 orders of magnitude larger. In October 2024 the International Finance Corporation (IFC) announced a USD 20 million risk-sharing facility with Equity Bank Kenya, covering the counties that host the Kakuma, Kalobeyei and Dadaab camps (IFC, 2024).

Figure 5. International Rescue Committee Re:BUiLD Programme

First-Loss Guarantee Partnership to de-risk lending to refugees. Managed by the International Rescue Committee (IRC), Open Capital, and Equity Bank Kenya to develop a Loan Guarantee Fund (LGF) model in Kenya.



Sources: Drawing on information in Maghanga, C. M., Odhiambo, B., Muya, B., & Mukami, E. (2025). Unlocking Financial Inclusion for Refugees through A Loan Guarantee Fund. IRC - International Rescue Committee.

These examples may provide useful ideas for other refugee lending and microfinance programs that specifically focus on clean energy support. For example, the non-profit impact investor, Acumen, has made such investments through KawiSafi Ventures, a fund that invests in businesses specializing in decarbonized and distributed energy infrastructure (KawiSafi, 2025). Further analysis could examine the potential of these approaches to expand energy investments.

Lessons for guarantees for refugee-led, sustainable energy provision

Incentives and expansion

Over the past 10 years substantive work has been undertaken to develop the market for energy in humanitarian settings (Boodhna et al., 2019). Analysis suggests that refugees pay substantial levels for energy access. For example, in Kakuma refugee camp in Kenya, many refugees were reported to be spending upwards of USD 50 a month for electricity in their homes and businesses. This figure represents around 30% of people's disposable income (Corbyn & Vianello, 2018). At the global level, estimates suggest that "people who live and work in and around [refugee] camps and settlements spend more than USD 1.6 billion per year on power and cooking" (Shell et al., 2020, p17). This demonstrates that there is a clear market for clean energy investors.

Within these energy markets, two spaces for potential expansion stand out. First are the energy businesses run and managed by refugee entrepreneurs. These entrepreneurs are "expanding the range of energy services and products available to refugee communities in terms of sustainability [and] providing new solar solutions and electricity connections from solar-powered energy sources" (Rosenberg-Jansen, 2025a, p1). These businesses can be well served by financial service partners, and they may be a suitable client for financial service providers backed by financial guarantees. This is a particularly viable prospect because refugee repayment rates for entrepreneurship loans are reliably high. For example, the microfinance platform Kiva reports that over 96% of its loans to refugees have been paid back in full (Kiva, 2025). Two programs described in this working paper – the GCAMF Refugees Financial Inclusion Guarantee Program and the Re:BUiLD program – could be expanded to work directly with refugee-led energy enterprises to integrate energy into existing guarantee mechanisms.

A second area for expansion and investment opportunities is electrifying refugee community spaces such as hospitals, schools and refugee community halls. (Rosenberg-Jansen, 2022a). Many of these spaces are managed by local NGOs or humanitarian organizations, which may need credit enhancements to provide security to service providers or lenders worried about their potential payment performance. Financial guarantees could mitigate contractual and financial risks for these organizations, incentivizing pay-for-service models using renewable energy rather than humanitarian organizations buying diesel generators. Similarly, refugee-led cooperatives offer a potential space for expansion for financial service providers'

loan portfolios (potentially backed by financial guarantees). Refugee committees and savings groups often come together to collectively pool funds (UNCDF, 2018). For example, installing solar power at a community hall in a Rwanda refugee camp, required the help of an NGO and UK academic funding, but the refugee community was able to cover ongoing maintenance and repair fees thanks to pooled resources (Coventry University, 2017). Innovative financial mechanisms that can assess loan viability for these community-led initiatives would further help to expand energy access in refugee spaces. For example, the expansion of the UNHCR Green Financing Facility or the application of the GPA Guarantee Mechanism specifically for refugee end-users in their homes and businesses could incentivize private-sector renewable energy solutions for a broader range of consumers.

Table 1 highlights positive lessons for the potential expansion of guarantees for renewable energy programming in humanitarian settings – drawing on our analysis of the literature.

Table 1: Incentives and learnings

Evidenced Learning Points	System Actions
Refugees have high repayment rates and are reliable customers (Kiva, 2025). Despite this, some credit risks are perceived inaccurately.	Loans should be at market rates so as not to distort local markets (Maghanga et al., 2025). At the same time, market rates can limit affordability and, in some cases, market penetration, especially for very low-income communities.
Financial guarantees can enhance credit accessibility in humanitarian contexts (Bruder & Choi, 2025).	Full guarantees or portfolio guarantees should be managed carefully to avoid over-extending credit to vulnerable households, as affordability challenges remain (Pistelli, & Guichandut, 2024).
The "flight risk" of refugees returning to their country of origin is low, and refugees contribute to local economic systems (Betts, 2021).	Installing bank branches in refugee camps can increase community engagement and create jobs for refugees (Garbacz et al., 2021).
Existing guarantee tools and banking processes can be adapted with relative ease for refugee communities (Bruder & Choi, 2025).	Guarantees are an important step, but there is a need to move to a fully commercialized system (Pistelli, & Guichandut, 2024). Foundational policies and technical assistance are crucial components of such efforts (Bruder & Choi, 2025).

For humanitarian operations planning to extend access to energy to forcibly displaced people and to switch from fossil fuels to renewable energy sources, financial guarantees can be a particularly useful mechanism. Guarantees have the potential to mitigate contractual and financial risks for humanitarian organizations, draw renewable energy companies to provide services for refugee camps, and allow the UN to outsource clean energy supply to external expert providers (GPA, 2025a). Guarantees can also reduce costs – by reducing the borrower's cost of capital, by reducing or limiting the amount an energy service company may charge as a premium to cover contractual risks, and by supporting the switch from expensive imported diesel to cheap renewable electricity. The case for financial guarantees for humanitarian agencies is relatively clear. However, only long-term analysis of the impacts of programs (such as UNHCR's Green Financing Facility) will reveal the full impacts of these investments over time.

For refugee communities, however, the benefits of financial guarantees are still unclear. Guarantees aim to achieve additionality effects by enabling loans that otherwise would not have been granted. As such, they seek to open-up lines of credit and formal financial systems to refugee businesses – leading to financial inclusion of refugees. The benefits of this are clear in terms of challenging norms around private-sector understanding of refugee communities, and providing evidence on the stability and often permeance of refugee communities (Easton-Calabria, 2022). However, questions remain about the long-term affordability of these loans and whether this system can become financially sustainable without donor support.

Disincentives and energy justice

A key issue with guaranteed loans, and indeed providing microcredit in general, is that they can lead to unintended consequences like increasing refugee debt in an unhelpful way. Issues of moral hazard can arise if the knowledge that the loan will be repaid with certainty affects loan officers' due diligence. As a result, if loans are too freely available to otherwise non-creditworthy borrowers, individuals or businesses may take on too much debt, and they may be unable to pay back what they have borrowed. This could worsen refugee credit ratings and could drive them further into poverty. There is a risk that financial guarantees may contribute to over-indebtedness among refugees by encouraging the uptake of excessive debt. As noted in the literature, guarantees can lead to unintended consequences for clients (Pistelli, & Guichandut, 2024, p1).

The question of equity of these financial loans also surfaces. If the only refugee businesses that can use the mechanism are those that are small or medium-sized and capable of borrowing larger amounts, are guarantees reaching the most vulnerable households? What financial mechanisms can reach the poorest households and micro-businesses within refugee camps (Endev & Practical Action, 2021)? A related issue is that financial guarantees supporting loans may only be suitable for energy enterprises that are supplying energy, and not for household customers for everyday energy needs. Indeed, loans were specifically intended to be large enough to discourage consumption-based borrowing because "previous experience indicated that when loan sizes were too small, default rates were higher due to funds being used for immediate consumption rather than investment" (Bruder & Choi, 2025, p9).

Financial sustainability is still a challenge, and the full economy of guaranteed investments is still unclear. UNHCR's experience of guarantees suggests that while the mechanism suited some financial service providers, there is a risk that "loan guarantees may distort the financial landscape by favouring the larger [financial service providers] that tend to be able to access them, rather than fostering a more inclusive environment" (Pistelli, & Guichandut, 2024, p1). Importantly, many guarantees in the humanitarian sector still rely on grant or donor funding initially. For example, the critical role of donor-subsidized guarantees and intensive grant-financed technical assistance suggests that "refugee finance requires phased engagement,

where donor-supported mechanisms must lay the groundwork for commercially viable, inclusive financial ecosystems" (Bruder & Choi, 2025, p11). Further research is needed to determine whether financial guarantees truly act as market-building devices for financial service providers in displacement settings – and whether and how purely commercial models are feasible.

Conclusions

Complexity and research recommendations

The energy sector is unique in many ways within the world of humanitarian action (Rosenberg-Jansen, 2022b), and financial guarantees within the sector are a complex issue. Financial guarantees are not a silver bullet for humanitarian energy. Future investments will need tailor approaches for specific contexts and utilize new learning on innovative finance mechanisms as the sector develops. Considerable further research will be required before the impacts of financial innovation in these contexts will be fully understood.

While some examples exist (such as the UNHCR Green Financing Facility), their impact to date is poorly understood. A number of guarantee mechanisms for humanitarian energy operations has been proposed (such as the GPA guarantee mechanism), but structural and financial issues have hindered the move from conception to reality. Several examples exist of financial guarantee mechanisms designed to support refugee entrepreneurs directly (such as the Re:BUiLD program in Kenya). However, these are rarely designed to reach the poorest households within displacement settings.

The long-term potential impacts of financial guarantees for humanitarian energy are also poorly understood. Evaluative work on the financial impacts of guarantees is needed to understand the long-term commercial viability of such mechanisms and how the finance system for refugee energy may become self-sustaining. Similarly, it is essential to explore social impacts and specific analyses on the distribution impacts of guarantees. For example, applying a framework for distributive equity for adaptation finance (Shawoo et al., 2024) could reveal new insights into how humanitarian organizations can effectively deliver financial inclusion for refugee communities.

New evidence will also be required to evaluate the impacts of guarantees on matters such as devising successful processes, improving the efficiency of investments, and assessing delivery. Analysis of gender and inclusivity impacts will also be important in developing sectoral understanding of how guarantees for energy investments may support women and marginalized groups. Evidence-based learning, practical reviews, and insights from grey literature will be essential, alongside academic analysis and theoretical considerations. Indeed, relatively little academic literature exists on guarantees in humanitarian settings, and such analysis could be developed as a PhD or research program.

More broadly, new research is also clearly needed to understand private-sector partnerships, and to provide advice for businesses and investors on innovative humanitarian energy and climate financial partnerships. Little is understood about how to

develop concrete routes for scaling effective financing in humanitarian contexts, or about how long-term sustainability can be developed to deliver innovative partnerships between the private sector and humanitarian organizations to supply renewable energy for refugees and deliver climate action in humanitarian settings. To drive such research forward, SEI is pursuing a new research agenda "Humanitarian energy and climate transitions" (SEI, 2025), which will develop key insights and actions for policy-makers and practitioners across the humanitarian climate and energy sectors. Further details are provided in the box below.

BOX 3. FURTHER RESOURCES

For those interested in learning more, several further resources are available, including:

- An online Humanitarian Energy Zotero Library which has up-to-date academic and practitioner articles that are open to all (Zotero, 2022). Within this library is a dedicated folder on financial guarantees in humanitarian energy.

- For an in-depth analysis of the humanitarian energy sector, the State of the Humanitarian Energy Sector Report, a review of the sector published by the Global Platform for Action for Sustainable Energy in Humanitarian Settings is a useful start (GPA, 2022).

- Further SEI publications on Humanitarian Energy Transitions are available online.

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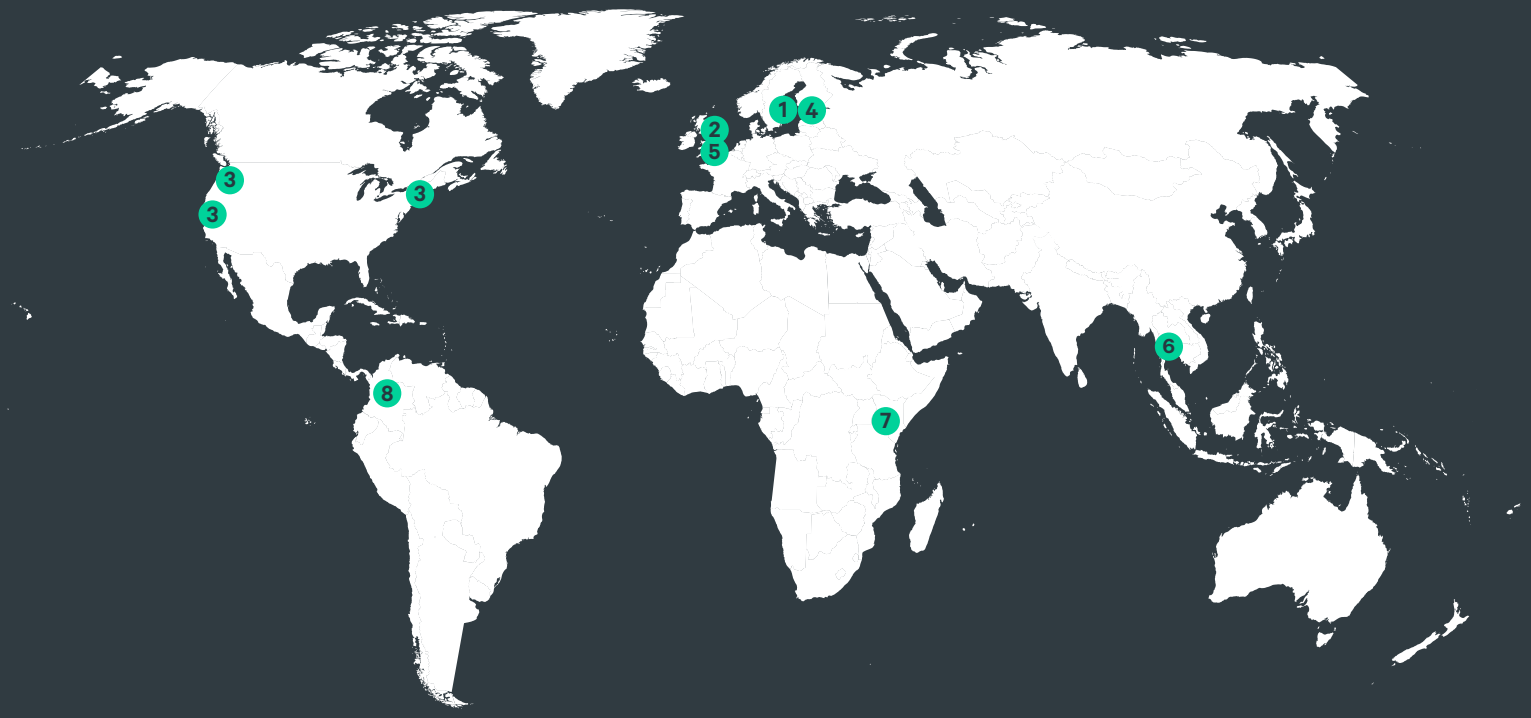

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