January 2022

Blended Finance Solutions for Clean Energy in Humanitarian and Displacement Settings

Lessons Learnt – An Initial Overview

GPA GLOBAL PLATFORM FOR ACTION

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IOM UN MIGRATION

Norad

OPERATED BY NRC NORCAP

Acronyms

BMZ	German Federal Ministry of Economic Cooperation and Development
DESCO	Distributed energy service companies
DIB	Development Impact Bond
EDM	Energy Delivery Models
ESDS	Energy Solutions for Displacement Settings
EU	European Union
GCR	Global Compact for Refugees
GPA	Global Platform for Action on Sustainable Energy in Displacement Settings
HIB	Humanitarian Impact Bond
IB	Impact Bond
ICRC	International Committee of the Red Cross
IDP	Internally Displaced Persons
IOM	International Organisation for Migration
KKCF	Kakuma Kalobeyei Challenge Fund
LPG	Liquified Petroleum Gas
MRV	Measuring, reporting and verification
NORAD	The Norwegian Agency for Development Cooperation
NRC	Norwegian Refugee Council
OECD	Organisation for Economic Co-operation and Development
PA	Practical Action
PAYG	Pay-As-You-Go
RBF	Results Based Financing
RE4R	Renewable Energy for Refugees
SDG	Sustainable Development Goal
SEED	Soutien Energétique et Environnemental dans la région de Diffa
SER	Staff Efficiency Ratio
SHS	Solar Home System
SIB	Social Impact Bond
Sida	Swedish International Development Cooperation Agency
SNV (Netherlands)	Foundation of Netherlands Volunteers
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
WEF	World Economic Forum
WFP	World Food Programme

Cover Photo: The local volunteer Michael Gatluak clean the new solar panels at the NRC office in Mankien – South Sudan. Photo: NORCAP / Iban Colón

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Woman cooking in the communal kitchen of the Biogas plant at the POC (Protection of Civilians Site) of Malakal – South Sudan. Photo: NORCAP / Iban Colón

1. Introduction

Currently, over 235 million people require humanitarian assistance (UN OCHA, 2021). Of these, 91.9 million people have been recorded as displaced as a result of persecution, conflict, violence, human rights violations or events seriously disturbing public order (UNHCR, 2021).

Energy is recognised as an enabler of basic human rights, however, a majority of displaced populations still lack sufficient access to clean, sustainable, reliable, appropriate and affordable energy (GPA, 2021). According to estimates, 80 per cent of refugees and displaced people in camps have minimal access to energy, with high dependence on traditional biomass for cooking and no access to electricity (Lahn and Grafham, 2015).

Limited access to energy can have severe repercussions on the health, safety and security of displaced populations and limits their opportunities to learn, become self-reliant and socialise with peers. Additionally, where the energy needs of the displaced community are being met, the financial and environmental costs tend to be high because of poor practices, inefficient appliances, high fuel costs and limited monitoring of energy consumption. Furthermore, diesel-powered generators are one of the most prevalent energy solutions for humanitarian operations due to the off-grid location of the response or their connection to grids that suffer from brownouts (drop in voltage) or blackouts. Although humanitarian organisations recognise their moral and financial obligation to 'green' their operations to minimise their climate and environmental footprint, it is an economic challenge to do so even when the transition to renewable sources of energy offers an opportunity to save money over the medium to long term.

Unfortunately, traditional grant-based funding, which humanitarian organisations rely on, is not sufficient to deliver the energy needs of the displaced (household cooking, household access to electricity, energy at service centres, such as health clinics and schools, and for livelihood opportunities) or to support the required institutional energy transition (see Chapter 2). In addition, due to its limitations, grant funding rarely results in self-sustaining energy solutions. Also, grant funding is not readily accessible to humanitarian actors to support their transition to more sustainable energy solutions. As such, if humanitarian actors were to rely on grant funding, it is unlikely that SDG7 (ensure access to affordable, reliable, sustainable and modern energy) will be achieved in displacement settings. Blended finance may, however, be part of the solution to bridging the funding gap and drive self-sustaining solutions in displacement settings by accessing financing from the private sector.

This report aims to provide an overview of blended finance mechanisms, their role in delivering sustainable energy solutions as part of the humanitarian response, highlighting key lessons learnt from their use in displacement settings and making recommendations for their continued development.

2. Funding challenges for energy programming in displacement settings

DELIVERING SUSTAINABLE SOLUTIONS AMIDST SHORT-TERM BUDGET CYCLES

Traditionally, humanitarian actors have delivered energy access solutions in displacement settings through free distributions of goods and services funded by grants from a variety of donors. Such approaches, however, do not result in sustainable solutions, as the provision of the goods and services usually cease once the grant funds have been spent. In addition, the scalability of most energy access projects is limited by the donors' contributions and ongoing interest in the energy topic, geographic location, humanitarian emergency or protracted situation. This is further compounded by the problem posed by annual budget cycles, which make it almost impossible for the humanitarian sector to implement energy projects, which can take up to five years, from the initial planning stage, to complete.

Furthermore, grant funding for decarbonising the humanitarian response (e.g. transitioning from diesel-based energy systems to solar solutions) or providing electricity access to a displacement setting provides additional challenges to traditional donors. For instance, many donors offer core funding to humanitarian actors and expect the grant to be used in the most resource-efficient manner. Therefore, if solar solutions are more cost-efficient than existing diesel-based systems, the donor expects the humanitarian actor to transition to the cheaper solution with the core funding it already receives.

ADDITIONALITY OF ENERGY PROGRAMMING

Energy access programmes can, however, create positive long-term effects that outweigh the original project funds spent. For instance, it has been calculated that every dollar spent on increased energy access results in a return on investment to the value of 1.40 USD to 1.70 USD from employment, improved health, productivity, and time-saving.(Shell, Dalberg & Vivid Economics, 2020). In addition, added benefits of displaced populations accessing clean energy can also lead to higher education rates, reduced protection risks, reduced environmental impact and access to information through smart technology, including phones and the internet, helping individuals make more informed choices.

WHOSE ROLE IS IT; HUMANITARIAN OR DEVELOPMENT ACTORS?

When traditional donors provide grants to humanitarian organisations, they typically seek results with a direct humanitarian impact and, as such, often view energy projects, especially those that increase access to electricity, as 'development' initiatives as the projects tend to stretch over an extended time period and results in long-term energy access solutions. The energy or development colleagues of traditional humanitarian donors, however, feel that providing energy infrastructure in displacement settings should be funded by their humanitarian counterparts, given the context and the 'temporary' nature of the displacement. Hence, we end up in a situation where donors see the value in supporting energy projects but feel unable to provide the necessary funding.

FINANCIAL CONTROLS AND LIMITATIONS ON PROCUREMENT MODALITIES

Many humanitarian partners, especially those within the UN system, have very restrictive financial rules and regulations which limit their ability to experiment with new financing strategies. For example, they are unable to take loans or benefit from any financial mechanisms that could be construed as a loan. Furthermore, humanitarian partners have limited experience with new procurement modalities such as "energy-as-a-service" or energy asset leasing models, which limit this potential avenue of private sector engagement and financing the delivery of sustainable solutions.

HUMANITARIAN RESPONSE IS UNDERFUNDED

Although we are at an all-time peak in terms of the number of people in need of humanitarian assistance, global funding for the humanitarian response has plateaued, resulting in an unparalleled funding gap of 52 per cent (Chatham House, 2021). More specifically, current spending on cooking and power in displacement settings has been estimated to be around 1.6 billion USD. By 2030 future spending could be as high as 5.3 billion USD (Shell, Dalberg & Vivid Economics, 2020). How will humanitarian organisations address this future financial need when they are already struggling to meet today's financial demands?

CHALLENGING COMMERCIAL ENVIRONMENT

The acknowledgement of such shortfalls with traditional grant-based solutions has resulted in the promotion of market-based approaches where the provision of energy services in displacement settings are delivered by the private sector, with assistance from humanitarian and/or government actors. In addition, the private sector is showing an increased interest in commercial opportunities to deliver energy access for cooking (cookstoves and/or fuel) and electricity (solar home systems and mini-grids) to the 'bottom of the pyramid' and 'last mile' end-users. Many displaced communities fall under such classification.

Commercial environments within refugee or migrant camps are, however, subject to a unique set of rules and regulations, which can be difficult for non-humanitarian actors to navigate. In addition, there is a clash of cultures. While humanitarian actors are focused on providing protection to the displaced, the majority of private sector actors a seeking commercially viable business models, even if they have a strong stance towards social responsibility. Overcoming this clash can be problematic because the two entities speak different 'languages' and have very different operational risk profiles. Furthermore, the lack of integration of displaced populations into national strategies perpetuates dependence on humanitarian aid. As such, policies and the supporting ecosystem (e.g., recognition of registration documents, right to work, cash-based interventions, access to bank accounts, mobile money, etc.) can be unfavourable for private sector investment and associated delivery models.

Given the perceived 'temporary' nature of such settings and the assumed lack of commercial opportunity within displaced communities, the private sector is cautious in its approach to delivering energy services to the displaced. Refugee settlements, however, have an average lifespan of 18 years (Haselip; 2022), and in protracted situations, there is a demand for commercial energy solutions. For instance, 53% of surveyed refugees in Tanzania purchased their cooking fuel, spending on average 12 USD a month per family, which is approximately three times the national average. Of those surveyed, 95% expressed a willingness to pay for Liquified Petroleum Gas (LPG) as a cooking fuel (Rivoal and Haselip, 2018).

Although such commercial opportunities exist, the range of risks and uncertainties for commercial entities and investors remain, especially with regards to affordability of potential solutions. As such, traditional approaches to financing energy programmes cannot be supported by the risk-return characteristics of displacement settings. Therefore, alternative financial mechanisms are required and hence the interest in innovative finance solutions for energy programmes in the humanitarian sector.

Innovative financing to replace grant funding

There is no agreed definition of 'innovative financing.' It is understood that relevant stakeholders consider innovative financing to encompass one or more of the following:

- Is everything that is not direct, traditional grant funding;
- The generation of additional money from non-traditional sources;
- Combining funds from multiple sources to accomplish one financing objective;
- Increasing the effective use of existing financial resources, including money received from traditional humanitarian donors, i.e., achieving more impact with the same amount of money;
- A finance mechanism that is new in the humanitarian system or one in which there is little experience; and/or
- Creating platforms which connect providers of capital/funds with borrowers.

It is important to note that many innovative finance solutions are designed in a way in which end users (displaced people) - at least partially - pay for goods or services. As such, it comes as no surprise that innovative finance solutions remain underdeveloped in the humanitarian system.

One type of innovative financing is blended financing. A definition for blended financing, an overview of blended finance mechanisms, their role in delivering sustainable energy solutions as part of the humanitarian response is outlined in the remainder of this report, which concludes with recommendations for their further development.

3. Blended finance

3.1. What is blended finance?

Blended finance is defined as an approach for increasing the amount of project funding by combining different types of financing from different sources and/or for different purposes, which contribute to development, social, environmental or humanitarian goals and generate financial returns. It is common for one source of funding within the blended finance solution to act as a catalyst for raising additional funds.

In essence, blended finance is a mechanism that allows organisations with different objectives to 'invest' alongside each other while achieving their own objectives (International Bank for Reconstruction and Development & World Bank, 2020).

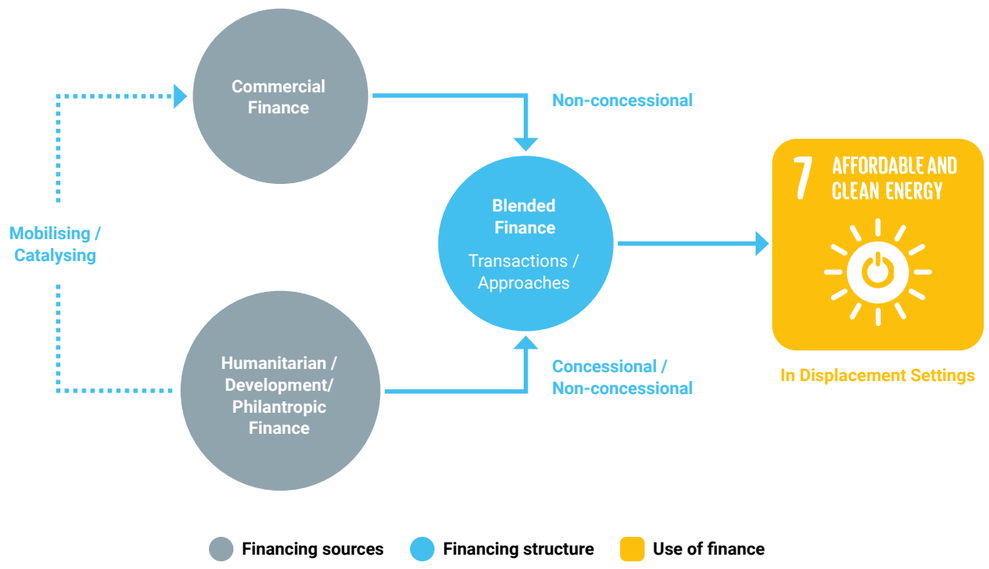
There are three key characteristics associated with blended finance, which are:

- **Leverage:** Use of humanitarian or development finance and philanthropic funds to attract commercial finance into projects.
- **Impact:** Investments that drive development, social, environmental or humanitarian progress.
- **Returns:** Financial returns for private investors in line with market expectations, based on real and perceived risks (WEF & OECD, 2015).

Figure 1 provides a pictorial overview of blended finance with regards to delivering SDG7 in displacement settings.

Figure 1: Overview of Blended Finance in Delivering SDG7

Adapted from OECD 2020



3.2. What is the role of blended finance?

The role of blended finance is to increase returns and/or lower risks for a commercial entity, which in turn allows it to mobilise private capital to develop markets it would not normally enter (WEF & BSG, 2019). In providing an improved risk-return proposition for the private sector, blended finance can help bridge funding gaps as the private sector invests its own money into the solution.

At present there is no estimate on the investment potential of the private sector for energy projects in displacement settings. It has, however, been noted that the impact investment market, who tolerate higher risks and below-market returns to generate positive social and environmental impacts, equated to approximately $715 billion at the end of 2019 (WEF, 2021).

3.3. Why is blended finance relevant to humanitarian energy programming?

Blended finance was first considered as a tool to fill the funding gap associated with delivering the Sustainable Development Goals (SDGs), as most of the finance flow was through intergovernmental mechanisms, multilateral grants and bilateral cooperation, which was not enough to achieve the SDGs (United Nations, 2021). Blended finance is, therefore, seen as a mechanism to mobilise private sector investment to support the delivery of the SDGs.

The rationale behind blended finance is to support projects with potentially high social benefits, which would not obtain traditionally funding on commercial terms due to the perceived high risk of operating in such contexts (WEF & OECD, 2015). Humanitarian actors are therefore interested in blended finance due to its ability to mobilise private sector investment in delivering long-term, sustainable solutions in what are perceived to be high-risk settings while addressing their own funding gap.

With respect to energy programming in displacement situations, blended finance is a mechanism that can leverage the mobilisation of private capital through grant funding, which, when combined, can deliver sustainable energy solutions in emerging or frontier markets that exist in and around many displacement settings.

3.4. What does blended finance look like?

As outlined by the Organisation for Economic Co-operation and Development (OECD) and the World Economic Forum (WEF), blended finance can include one or more of the following financial support mechanisms:

1. Direct funding for the removal of commercial barriers;
2. Technical assistance;
3. Risk transfer mechanisms; and/or
4. Market incentives.

A summary of each mechanism in presented in Table 1 and an overview of each, including examples from humanitarian energy programming, is provided in Chapter 4.

No one blended finance solution, however, will fit all situations. Therefore, the structure of a particular blended finance instrument must be specific to the aims, financial needs, delivery model, and risk profile of the programme it aims to support (Cohen & Patel, 2019).

3.5. When and how to use blended finance solutions

Blended finance should only be used in situations where a market failure prevents traditional market development by the private sector, which results in humanitarian, development, social and/or environmental impacts that outweighs the expected financial returns of the private investors supporting project. It is, therefore, crucial that the financial package offered to the private sector is not greater than that deemed necessary to induce the intended investment. This approach is referred to as the minimum concessionality principle (OECD, 2020[1]).

To assess whether blended finance is needed and how it can be effectively structured, it is essential to understand the restrictions and market failures and the sectoral, country and humanitarian context, and to articulate how blended finance is supporting the creation of markets or is helping them move toward commercial sustainability (IFC, 2018). As a result, it is important to ensure the blended finance solution is

designed to meet the identified challenge or challenges and does not provide financial support to commercial risks that can be addressed by the private sector alone.

It is also noted that blended finance should only be used to address temporary challenges in the marketplace. For instance, where an initial push to provide a 'safe' operating space is required, from which the private sector can build a self-sustaining commercial presence that requires no additional concessional funds.

3.6. Blended finance, subsidies and policy reform

A subsidy is defined as a direct or indirect payment to individuals or commercial entities that remove a 'problem' to promote a social good or an economic policy. In economic terms, a subsidy is used to offset market failures and externalities in order to achieve greater economic efficiency (Investopedia, 2021). As such, it can be argued that blended finance is a form of subsidy.

Financing on commercial terms should, however, always be the preferred option to avoid distorting markets or creating private sector dependence on subsidies. Blended finance is, therefore, not the solution to long-term structural issues where permanent subsidies are called for. Nor is it the solution for inadequate policies where policy reforms are required (IFC, 2018).

3.7. Supporting mechanisms

Climate funds and carbon financing can be used to support blended finance initiatives in humanitarian situations. In addition, cash-based interventions, end-user finance and payment systems can play an important role in supporting the introduction of private sector solutions to displacement settings. However, they usually require a long-term approach that many humanitarian operations cannot commit to. They are, however, subject matters in their own right and, as such, it is envisioned that these topics will be covered by the Global Platform for Action on Sustainable Energy in Displacement Settings (GPA) in future reports.

Table 1: Summary of Blended Finance Mechanisms

Adapted from WEF 2015

Direct funding for the removal of commercial barriers	Direct funding is provided to unlock a barrier that is preventing an otherwise commercially viable project from commencing. Direct funding is in effect a grant but unlike traditional grants the aim of the one-off donation is to create a commercially sustainable business by removing an identified market barrier.
Technical assistance	Technical assistance addresses risks in new, uncertain and fragmented markets for investors. Costs and risks associated with exposure to new markets, technical uncertainty, and the inability to build a pipeline can be reduced, lowering the high transaction costs for investors and reducing operational risks which often dissuade a commitment of funds.
Risk transfer mechanisms	Risk transfer reduces specific risks associated with a transaction. This mechanism provides direct compensation or assumes losses for specific negative events, addressing the concern of private capital providers to ensure their capital can be preserved related to project/company specific risks.
Market incentives	Market incentives address critical sectors that do not support market fundamentals. This helps new and distressed markets that require either scale to be commercially viable or reduced volatility, by providing fixed pricing for products in order for private capital to justify committing to the sector.

4. Blended finance solutions for energy programming in displacement settings

The following chapter provides an overview of the four blended finance mechanisms noted in Section 3.4. The overview includes a summary of the mechanism, how it works, its pros and cons, its relevance to energy programming in displacement settings, and examples of relevant projects; highlighting lessons learnt.

4.1. Direct funding for the removal of commercial barriers

4.1.1. What is it and how does it work?

Funding is provided by a donor to a project to unlock a barrier that is preventing an otherwise commercially viable project from starting. The direct funding is in effect a grant, so does not have to be paid back, but unlike traditional grants the aim of the one-off donation is to create a commercially sustainable business by removing the identified barrier, as noted in Figure 2.

Direct funding should only be used if there is a clearly identifiable barrier, which has been identified during the baseline survey and is recognised as the main barrier to an energy programme.

4.1.2. How can it be applied to displacement settings?

Barriers to entry that are relevant to displacement settings could include costs, amongst others, associated with construction, logistics, technology, appliances and import taxes for project infrastructure.

As an example, an energy service company could have a commercially viable business to sell electricity to a

Figure 2: Overview of Direct Funding Mechanism

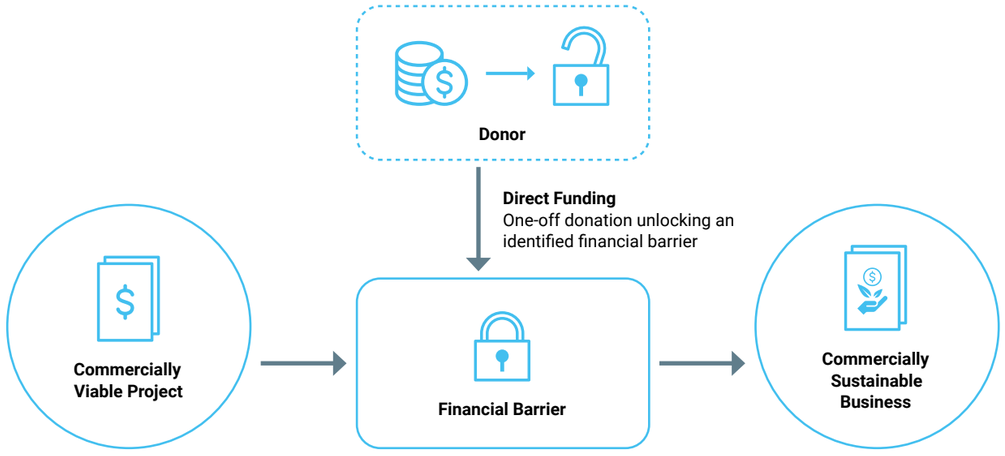


Figure 3: *Wiring from the main cables without protection. Photo copyright: UNHCR / Yanal Almadanat*

humanitarian actor from a solar plant that the energy service company will own and operate. However, before being able to use this electricity, the humanitarian partner would need to invest in upgrading their electrical wiring system. This project attribute is a financial hurdle, which - if incorporated into the business model – could make the project more expensive than an existing diesel-based solution, preventing the humanitarian actor from transitioning to a cleaner source of energy. A direct payment from a donor could, however, cover that cost of the wiring upgrade and unlock a commercially viable activity, that has development, humanitarian, social and/or environmental benefits. Other project attributes associated to decarbonising activities that could be supported by a one-off grant could include:

- Preliminary works associated with:
  - Upgrading existing electrical cabling within the building and the extension to the new solar plant;
  - Strengthening roofing or foundations to support the solar solution;
  - Moving existing infrastructure to make space for the solar solution; and/or
  - Replacing existing equipment with more energy-efficient solutions, such as energy efficient appliances, air conditioning units, lighting, etc., which in turn would reduce the size of the solution and reduce costs.
- Moving and transporting high-value goods:
  - Over long distances and through terrain, where there is a significant risk of goods becoming damaged, and insurance is unavailable or too expensive; or
  - Through conflict zones, where there is a significant risk of goods becoming damaged or stolen as a result of an ambush.
- Technological solutions, such as battery storage in areas where alternative emergency back-up solutions are essential but not readily available, e.g. diesel supply is sporadic and limited.
- Appliances, which once distributed, allow the private sector to sell services, including electricity and fuel, to the end-user.
- Taxes associated with importing project infrastructure into a country, which only requires a single payment.

Similarly, barriers to household cooking projects could include the cost of a vehicle for distribution, a safe storage compound for a fuel, the initial cost of an appropriate cook stove, training technicians and users, etc.

4.1.3. Example project: Humanitarian Hub in Malakal, South Sudan

The significant capital investment costs of launching new clean energy access projects in displacement settings are often the most challenging hurdle and can keep a project on hold until appropriate funding is found. The sourcing of high-quality equipment and technical expertise in remote areas, or the logistics and delivery of materials through high-risk areas (sometimes via helicopter or convoy), can significantly increase the capital needed. In some cases, these start-up costs can be prohibitive.

One such example involved an energy transition project at the Humanitarian Hub in Malakal, South Sudan, which is managed by the International Organisation for Migration (IOM). The Hub hosts about 300 employees from 34 organisations who are supporting the nearly 30,000 internally displaced persons (IDPs), host community members and returnees affected by years of severe conflict. As is the case in many similar remote hubs, the existing energy infrastructure relied exclusively on diesel-powered generators, leading to fuel supply risks and lack of autonomy, impacting local air quality, noise, and contributing to permanently high energy costs as well as carbon emissions (Scatec Solar, 2020).

When IOM examined the possibility of transitioning the facility to run on solar, instead of opting for the traditional donor-funded capital investment model, they decided to sign an energy service agreement to reduce the level of their own capital investment. This contract, subject to a confidentiality agreement, allowed IOM to purchase energy-as-a-service from Scatec Solar, the project developer and independent distributed power producer, who installed the 700 kWp solar photovoltaic system (IOM, 2020).

As part of the terms of the deal, IOM had to cover a portion of the initial hardware and installation costs and then pay for the solar panels and batteries for the duration of their operations in Malakal. The cost were to cover commercial barriers to the project. Thanks to a donor grant of 300,000 GBP from the UK's Department for International Development (DFID, now FCDO), the project was greenlighted and completed in June 2020.

The Malakal project accounts for an 80% reduction in the Hub's consumptions of diesel fuel (IOM, 2020), equating to a saving of around 800 litres per day, or 292,000 litres per year (equivalent to a saving of approximately 76 tonnes of CO_2 per year), resulting in annual energy savings of approximately 18%. It is believed that further cost savings could have been achievable if a suitable de-risking mechanism was available to de-risk the termination clause within the long-term agreement between the two parties (see section 4.3.3).

Figure 4: *Final stages of the solar power plant installation at the Humanitarian Hub in Malakal, South Sudan. Photo copyright: IOM 2020 / Omar Patan*

4.1.4. Example project: Commercial development of an LPG market by UNHCR Niger

The United Nations High Commissioner for Refugees (UNHCR) Niger, with approximately 2 million Euros of funding from the European Union (EU), developed the SEED programme (Soutien Energétique et Environnemental dans la région de Diffa), with the aim of supporting the commercial development of a regional, self-sustaining LPG market for clean cooking.

The intervention was focussed on the Diffa region of Niger, where the wider ecosystem is supportive of blended finance solutions. The Niger government has afforded refugees with the legal right to work, study, move freely, access finance and open bank accounts. In addition, the displaced are fully integrated into local communities, which also include IDP.

Prior to the SEED programme, households were paying up to 24 USD per month for firewood; their main source of cooking energy. Although LPG was available and cheaper, approximately 10 USD per month, households could not transition to LPG as a cooking fuel, as the cost of the LPG kit (first cylinder, gas regulator and cookstove) was too high. The cost of the LPG kit was approximately 40 USD, around 80% of the maximum monthly household income of 50 USD per month (UNHCR, 2017).

The SEED programme used the EU funding to purchase 25,000 LPG kits and distribute them freely to the most vulnerable families in Diffa, together with vouchers to refill the 6-kg LPG cylinders eight times, enough for an average-sized household to cook with LPG for five to six months. By distributing LPG kits to vulnerable households, UNHCR unlocked the barrier to entry and created a commercial demand for cooking fuel. The commercial demand was met by SONIHY, a Nigerien gas company. SONIHY also invested 1.5 million Euros in the scheme to construct five new 10-tonne filling stations, to service 30 new LPG selling points across the region. UNHCR Niger also acted as a reference to support SONIHY's negotiations with a local bank to obtain loans for the required infrastructure (Patel & Gross, 2019).

As a result of economies of scale, through the SEED programme and SONIHY investment in infrastructure,

Figure 5: *Women refugee in Abala (Tillabery). Photo copyright: UNHCR/Boubacar Younoussa Siddo*

the price of LPG has fallen from approximately 10 USD per 6-kg cylinder to 3 USD per cylinder. An average family now pays between 3 USD and 5 USD per month on energy to meet its cooking needs. This cost reduction has improved the sustainability of the LPG market beyond the initial UNHCR subsidy period, with 70 per cent of the 25,000 UNHCR-supported households continuing to purchase LPG after their initial vouchers had been used up. The low price of LPG has also attracted between 4,000 and 5,000 new LPG customers in the region who were not SEED beneficiaries (UNHCR, 2017).

Sellers of firewood who were negatively affected by the fuel-switching programme were compensated through cash or redeployed into the LPG supply chain by opening small retail shops or supporting the delivery of LPG with donated donkeys and carts.

Within 15 months, the total amount of EU funding for SEED was recovered in savings from fuel purchases by people living in the region. This household income boost also supports other donor investments in livelihood-improvement activities (UNHCR, 2017).

A number of project-specific lessons learnt have been documented, which include:

- The most vulnerable households struggled to pay the 3 USD for a 6-kg cylinder refill but could have benefited from a smaller 2.5-kg cylinder bottle.
- Many of the 30% of households that stopped using LPG after the SEED programme refills ran out did so because they were forced to sell their cylinders to pay for food.
- Development of livelihood opportunities should be undertaken in parallel to energy access projects to increase cash flows and the purchasing power of end-users to increase the sustainability of the energy projects.

Publicly available information of the lessons from the UNHCR / SONIHY partnership has not been identified, although the relationship building between partners is a key part of any successful blended finance solution. It would also be of value to understand the medium to long term impacts of the project.

4.1.5. Lessons learnt

Targeted funding, delivered at the right moment, can sometimes unlock a commercially viable project that has a long-term impact. Direct funding could also be used to kickstart local market demand for certain energy products or services (e.g. clean cooking fuels) by overcoming the initial capital investment hurdle.

It is noted that the successful outcomes of the project examples were supported by:

- Accurate and relevant data on energy demand and market dynamics was available.
- There was a clear economic model to help support the transition of an existing energy customer to a cleaner energy solution.
- Strong government support, with regards to the cooking project in Niger.
- Relevant skills were available to review the project's commercial viability and ensure the sustainability of the energy intervention.
- Donors were willing to act outside of the box.
- Internal champions who believed in the projects and can advocate for a new way of working.

While each of the projects is a one-off piecemeal solution, the solutions could be replicable in similar environments, especially the example associated with decarbonising energy infrastructure. Although the confidentiality agreement between the parties is a challenge to discussing the business case and identifying possible improvements to the approach. Based on the above, however, a specific fund aimed at identifying and unlocking commercial barriers in displacement settings would prepare the ground for large scale interventions.

4.2. Technical assistance

4.2.1. What is it and how does it work?

Technical assistance is a mechanism that can attract private finance to humanitarian energy projects by using 'in-kind' technical expertise or a 'technical assistance grant' to address knowledge gaps. It can be directly incorporated within a finance solution or operate as a discrete service.

Technical assistance can take the form of advisory and consulting services for project preparation. It can also include operational assistance, skills training, knowledge sharing, and other professional services, such as legal, financial or procurement assistance to improve the business viability of the project and thus enhance its investment performance (IDFC, 2019 and OECD & WEF, 2015).

Figure 6: *Solar panel wires being checked by the local volunteer Michael Gatluak at the NRC office in Mankien, South Sudan. Photo copyright: NORCAP/ Iban Colón*

Technical assistance can only be considered a blended finance mechanism if the outputs result in a collaboration with the private sector to deliver an energy solution.

4.2.2. How can it be applied to displaced settings?

Expertise and capacity to design and implement modern energy access and renewable energy interventions in displacement settings are severely limited; as a result, energy programmes have not been, and are not always being, developed by energy specialists. Consequently, it is rarely possible to get a clear understanding of the energy needs of displaced communities, energy programming is slow to adapt to new delivery models, and there is limited understanding of the inputs and supporting ecosystem required to move towards sustainable private sector lead solutions. In addition, internal support mechanisms tend to be most responsive to energy programming that has gone on before, which maintains the status quo.

Designing and implementing a modern energy solution is complex, requires solid technical, economical and implementation know-how, and can take up to five years to implement. Especially with regards to undertaking baseline needs assessments and market surveys, creating partnerships, developing sustainable delivery models, balancing humanitarian needs against commercial incentives and finding non-traditional financing. As a result, there is a need for energy specialists across the project spectrum and throughout the project lifecycle to undertake data collection, interpret the data to establish the needs, develop appropriate delivery models, support the creation of business plans and financial models, build project partnerships, provide legal and procurement support, implement projects, and monitor the results. Rarely can one 'expert' undertake all these tasks, and rarely can an specialist switch from delivering cooking projects to developing a solar solution.

Humanitarian actors have, however, relied on deployment programmes for years, where specialists in a particular field can be sent by a deployment agency to support a humanitarian operation free of charge. In addition, grants have also been used to pay for specialist programming support. This can, however, lead to procurement challenges if the initial support has been provided by a commercial entity that could also deliver the solution, as this would be defined as a conflict of interest under UN procurement rules.

4.2.3. Example project: NORCAP energy expert deployment programme

NORCAPs clean energy project provides humanitarian agencies with much needed energy expertise along three strategic areas: improving energy access (cooking and electrification) for end users; decarbonisation of humanitarian responses through increased renewable energy supply; and global coordination through dedicated staff to the GPA Coordination Unit and headquarters of humanitarian agencies. The programme has been funded by the Norwegian Agency for Development Cooperation (NORAD) for four years to the value of approximately 6,700,000 USD. The programme is geographically focused on supporting energy solutions in Africa, given the need and impact.

In 2021, NORCAP provided energy expertise to partners such as UNHCR, IOM, the Norwegian Refugee Council (NRC), the World Food Programme (WFP), and the United Nations Institute for Training and Research (UNITAR) / GPA Coordination Unit. The experts have a wide range of experience and expertise in the areas of bioenergy, solar energy, energy efficiency, coordination and cooking energy and work in several countries in Africa, including Tanzania, Kenya, Uganda and South Sudan, as well as Jordan and UN agency headquarters in Geneva and Rome.

NORCAP energy Specialists have undertaken initial research, data collection, developed proposals and/ or engaged with potential partners on 15 projects to support private sector lead solutions in displacement settings.

From its experience in providing energy expertise to humanitarian partners, NORCAP has noted the following:

- Humanitarian agencies do not always have the financial means to move a particular energy programme forward once developed by the energy specialist.
- Not all humanitarian partners are aware of the benefits associated with private sector lead energy solutions, and it can take a significant amount of advocacy to convince partners to transition to new delivery models.
- A number of NORCAP energy specialists have taken the GPA Energy Delivery Models (EDM) Training Programme in order to support the development of new energy interventions. This has led to the creation of private sector-lead energy project proposals that may not otherwise have been written.

4.2.4. Example project: GIZ Energy Solutions for Displacement Settings

The Energy Solutions for Displacement Settings (ESDS) project is one of four components of a global programme sponsored by the German Federal Ministry of Economic Cooperation and Development (BMZ) to support UNHCR in the implementation of the Global Compact on Refugees (GCR). The focus of ESDS is on providing sustainable energy solutions to refugee and host communities in Ethiopia, Kenya, and Uganda to enhance self-reliance. The 12 million Euro programme began in November 2018 and is funded until the end of December 2022. It is understood that a project extension, along with an additional funding request, is presently being prepared.

ESDS activities are structured along with three intervention areas, namely:

- Improving the Policy Framework by working with policy makers to create the required framework to implement the GCR and ensure sustainable energy access for refugees and host communities at a national, regional and district levels.
- Greening UNHCR Infrastructure, by providing technical advice to UNHCR to support the implementation of energy efficiency measures to reduce its diesel consumption and to help its transition to solar based energy infrastructure via market-based approaches.
- Improving market-based access to energy by promoting markets for sustainable energy products and services for refugee and host communities in collaboration with UNHCR and private sector actors (Energypedia, 2021).

The ESDS project team works towards these objectives, in selected regions, in collaboration with UNHCR and local and national authorities. ESDS has also provided technical assistance to UNHCR to support the finalisation of the technical designs and comparative financial modelling for all sites that are to be solarised under the Green Finance Facility (see section 4.3.3). In addition, ESDS designed a financial model adapted to UNHCR requirements regarding tariff setting and cost comparison for its solarisation programme.

The project is ongoing, and a mid-term review is presently being drafted. It is, however, noted that:

- ESDS Uganda is working with Results Based Financing (RBF) schemes for improved cookstoves and SHS. Two stove companies and two solar companies have been contracted, with 2,000 stoves and 3,750 solar PV systems sold so far (numbers are currently being verified independently). A similar RBF scheme is planned for Ethiopia.
- A key learning from the RBF programme is that although it enhances access to quality products, the scheme can lead to conflict with local traders who are selling poor quality (sometimes counterfeit) products.

The NORCAP expert Geophrey Oyugi checking the levels of pressure at the Biogas plant in Malakal – South Sudan. Photo: NORCAP / Iban Colón

- The programme is only focused on one humanitarian actor and working in three East African countries, and, as a result, a structure dissemination plan for the lessons learnt from the various programmes and contexts would be of value to the wider community.

- The technical capacity programme also comes with its own project funding to support market-based interventions, which brings additionality to the programme.

4.2.5. Lessons Learnt

The provision of technical support is probably the easiest blended finance solution to develop with humanitarian actors. The results of which can lead to improved project performance and, therefore, enhanced investment opportunities.

There are, however, a few important considerations to use this solution successfully:

- The receiving partner should provide a conducive support structure (such as technical and personal support or travel budget for the expert).

- Clear goals and deliverables should be identified before the deployment with a commitment to apply them.

- Community engagement, government support and accountability need to be incorporated into the project development process to identify the best solution for a particular context.

- The receiving partner should consider developing its own energy team at a regional or country level and reducing the reliance on deployed, short-term expertise.

- Exchanging knowledge and sharing data are essential to avoid duplicating efforts and partners working in the same context should join forces to complement each other, not compete.

- At the global level, key partners join forces to create standardised tools that help collect comparable, quality data based on an agreed set of indicators.

Studies and exploratory work can be undertaken by a third party, ensuring the independence of the conclusion and removing potential conflicts of interest with a potential service provider. During long term deployments, which include a knowledge transfer component, provide an opportunity to increase local capacity and local knowledge.

4.3. Risk transfer mechanisms

4.3.1. What are they and how do they work?

Risk transfer mechanisms are management tools that transfer risks to a third party. They involve one party assuming the liabilities and financial consequences of another party, ensuring that any financing gap that might emerge is partially or fully covered (Economic and Social Commission for Asia and the Pacific Committee on Disaster Risk Reduction, 2017).

Risk transfer mechanisms can either: improve the credit profile of energy projects or companies who are seeking project capital; or provide comfort to investors that they will be able to recover their investment or absorb smaller losses if events negatively impact their returns. Therefore, risk transfer instruments shift the risk-return profile of an investment opportunity, moving it from un-investable to investable. Two of the most common types of risk transfer tools are insurance policies and guarantees (IDFC, 2019).

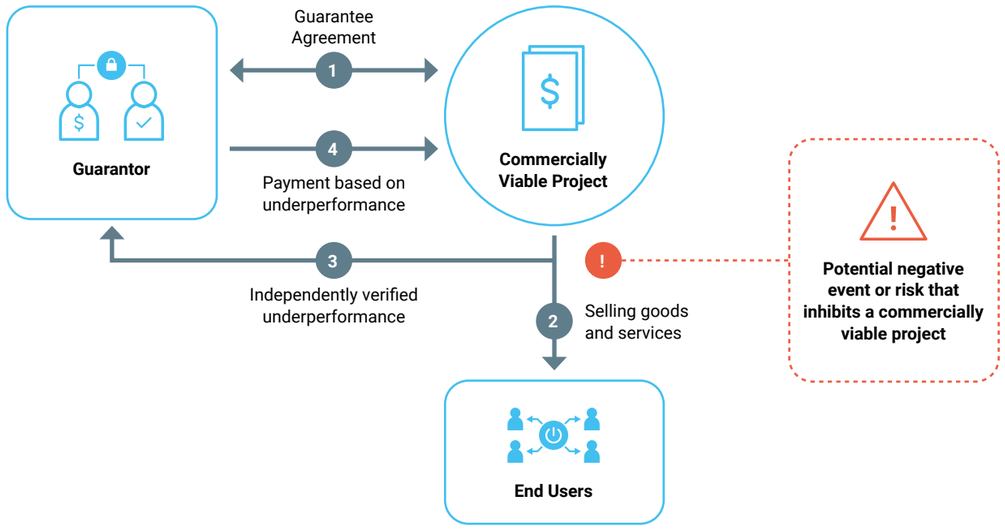
Insurance policies are contracts issued by a third party agreeing to make a payment in the case of a particular event occurring, thus preserving the capital of the insured party. In this way, they can reduce actual or perceived risks.

A ***guarantee*** is a formal assurance that if an undesirable event occurs, the guarantor will act on behalf of the guaranteed party and assumes responsibility. For example, a guarantee can be used to ensure that if an individual fails to repay the costs associated with a solar home system (SHS), the guarantor will cover all or part of the repayment. Guarantees can help ensure that commercial entities receive a minimum level of return or can limit an investor's losses if a business opportunity underperforms.

More specifically, a guarantee fund is money that has been set aside and earmarked to underwrite a project and acts as a formal assurance to the guaranteed party, in this case the energy solution provider, see Figure 7. As such, a guarantee fund provides direct compensation to, or assumes losses for, a specified negative event and in doing so offsets a financial risk associated to an energy intervention, which in turn facilitates private capital investment.

For example, a ***loan guarantee*** is a financial instrument aimed at facilitating micro, small and medium-sized enterprises' access to formal lending through the provision of credit guarantees that mitigate the risk of non-repayment. In practice, a loan guarantee replaces or reduces the need for other forms of collateral, resulting in a larger number of enterprises having

Figure 7: Overview of Guarantee Fund



access to loan facilities. Essentially, a loan guarantee is a commitment by a third party to cover all or some of the risks associated with a loan to its client, who may not have sufficient collateral or may not be deemed creditworthy. As such, if for any reason the borrower fails to repay, the lender can resort to partial repayment from the guarantor. Therefore, the loan guarantee removes barriers to financing the borrower and permits financing on more favourable terms. In addition, loan guarantees can be used by commercially viable enterprises but face additional barriers to financing (IFAD, 2014).

Insurance policies and guarantees typically require no immediate outlay of capital, but payment is triggered when a specified event occurs, which will only happen in a small proportion of cases. This enables a given pot of guaranteed funding to be spread across multiple projects (WEF & OECD, 2015).

4.3.2. How can it be applied to displaced settings?

In addition to the SHS example noted above, humanitarian actors, especially within the United Nations, must include termination clauses within long term agreements, given the nature of their work. The termination clause may give the supplier as little as 30 days' notice that the humanitarian actor is intending to cancel the contract. Where the supplier requires upfront investment to deliver the requested services, such as constructing a solar system to supply electricity to a humanitarian agency under a power purchase agreement, the termination clause is seen as a significant contractual risk. As such, it may be impossible or uneconomic for the energy supply company to secure financing for the upfront costs associated with the solar system, even if the contract is for a 10-year period. A guarantee underwriting the termination risk within a contract could therefore unlock private sector investment in solar solutions for humanitarian actors.

Similar contractual risks may exist with other electricity off-takers in displacement settings, such as health centres, schools and/or commercial entities supporting livelihood opportunities, which could be de-risked through guarantees.

A loan guarantee could, for example, reduce the cost of the goods as a result of reducing the cost of financing. This could be significant, as the cost of financing has been identified as a major reason for the rise in costs to

the consumer for a pay-as-you-go solar home system when compared to the costs associated with buying the same system up front in a single payment. This cost differential can result in PAYG SHS costing three times as much when compared to an outright purchase of the same system.

In addition, guarantee mechanisms could also be used to secure loans to individuals in displacement settings to pay for energy products in instalments (or via PAYG models) to transfer excessive risk or to support displaced and host community run energy projects.

On the other hand, there has been little use of risk underwriting and insurance products as a blended finance mechanism in displacement settings. The anticipated high cost of such risk mitigation tools may limit their role in the future.

4.3.3. Example project: UNHCR Green Finance Facility

UNHCR's compounds, premises, and offices generate greenhouse gas emissions amounting to approximately 97,000 tons of carbon dioxide annually (UNHCR, 2020). Diesel generators for the production of electricity are a major source of these emissions. In 2019, the Swedish International Development Cooperation Agency (Sida) commissioned a study showing that converting diesel-based infrastructure to solar energy could significantly reduce carbon emissions and costs. As a result, Sida provided UNHCR with approximately 4 million USD to establish an internal Green Finance Facility to support its transition from diesel to solar energy.

The Green Finance Facility will be used as a guarantee mechanism to de-risk contracts with the private sector, providing clean energy as a service via long-term power purchase agreements, which will:

- Allow UNHCR to leverage the technical and financing capabilities of the private sector to undertake the design, ownership, operations, and maintenance of the solar system.
- Support open and competitive procurement to encourage fair and effective competition while seeking the best possible technical solution.
- Support a termination payment in the event that UNHCR has to terminate the contract(s) before the end of the payback period.
- Reduce carbon generation at facilities by 60 to 100%, reduce costs by up to 35% and create commercially viable opportunities for the private sector in humanitarian settings (UNHCR, 2020).

UNHCR are initially targeting 3 sites; Kakuma in Kenya and Adjumani and Yumbe in Uganda, following an expression of interest, which closed in early 2021. The Request for Proposal was issued at the beginning of September 2021 and will be directed to preferred bidders who have been identified through the expressions of interest process.

As the projects have yet to be established under the Green Finance Facility, there is little to share with regards to lessons learned, however, it is noted that:

- UNHCR's energy transition programme, under the Green Finance Facility and its energy access programmes, is currently limited to their own premises (offices). A solution suitable for energy programmes in displaced or local host communities (for example, using UNHCR or other humanitarian agencies as an anchor client) still needs to be developed.
- Financial guarantee mechanisms within the UN system must follow UN financial rules. With the exception of the International Fund for Agricultural Development and the United Nations Capital Development Fund, reportedly, financial guarantee mechanisms within the UN are only permitted when cash reserves match the financial exposure dollar to dollar, i.e., the value of the guarantee fund must match the value of the guaranteed services (UNDP Global Energy & Finance Advisor, 2020, personal conversation; UNCDF Investment Lead, 2021, personal conversation).
- The Green Finance Facility is for one agency. Other agencies have set up similar funds in the past for other purposes. The existence of multiple funds across multiple agencies can lead to competition for donor funding. It would be more resource-efficient if such a guarantee fund could be accessed by multiple partners, including organisations outside the UN.
- In relation to the previous two bullet points, a global guarantee mechanism has been explored by the GPA Coordination Unit. The results of the study suggest a guarantee facility housed outside of the UN, accessible by all, with 6 million USD of capitalisation could underwrite 65 million USD of private investment. This equates to 1 USD of guarantee underwriting just under 11 USD of investment (EMRC, Shell & GPA, 2020).

4.3.4. Example project: IOM Research in Mozambique

In 2020 as part of Shell's Enter Energy project and its partnership with IOM, a consulting study done by the Differ Group assessed the feasibility of setting up a guarantee fund to support local Distributed Energy Service Companies (DESCOs) that sell household energy access products such as solar home systems (SHS) to customers in displacement affected areas in Mozambique. The study's main objective was to understand whether a particular guarantee mechanism could overcome the following barriers: uncertainty regarding the permanence of resettlement areas; limited DESCO presence in resettlement areas; sparsely populated rural and resettlement areas; high working capital requirements for the DESCOs; and high capital cost of productive use equipment which makes it risky to sell on PAYG (Differ, 2021). The key findings of the study are noted in the proceeding paragraphs.

For instance, a ***product default guarantee mechanism*** would compensate the DESCO for a pre-agreed share of their financial losses in the event where a customer stops paying for a PAYG product during the repayment phase (e.g. after three months of non-payment, and lasting up to six months), also preventing the need for product repossession. While this mechanism would give such customers increased time to restart their payments, which might help those with seasonal revenues bridge to the next harvest season and avoid repossession of the system, it also creates a strong perverse incentive for customers to simply stop making their monthly payments while continuing to use their SHS. This would result in a very high likelihood of rapid depletion of funds. Furthermore, the measuring, reporting and verification (MRV) of this scheme would be very challenging in practice as it would require checking that the product was installed, that payments were not made for the past three months, that support was not already claimed for the device and that once the guarantee support is provided, that the DESCO would not be double compensated in the event that the customer resumes making payments.

Lack of working capital was identified by some DESCOs as a barrier to entering the SHS market in resettlement areas. A ***working capital loan guarantee mechanism*** could be used to create a fund, through the help of a financial institution/ intermediary to provide a credit backstop in the event that DESCO defaults on their working capital loan to their creditor. This scheme has a much lower risk of being abused due to adverse incentives and has a low likelihood of resulting in depletion of funds.

A ***portfolio guarantee mechanism*** is similar to the product default guarantee in that it absorbs a portion of the risk of high customer defaults in resettlement areas. It is, however, applied at the portfolio level, meaning that it compensates a DESCO for financial losses if the average default rate on its entire pool of customers exceeds the average default rate that it would normally experience in a given country and covers this difference. The result should be that the companies can operate under the assumption that resettlement areas perform the same way as the rest of the country and are a normal part of the business. In terms of adverse incentives, the scheme could potentially incentivize DESCOs to sell to anyone regardless of income or ability to pay, not follow up with delinquent accounts, and then harvest the guarantee support in lieu of revenue. As a consequence, there is a risk of fund depletion, which is higher early on, and then diminishes over time.

Figure 8: *Energy assessment conducted by IOM Energy Officers in a resettlement site in Sofala Province, Mozambique. Photo copyright: IOM 2020 / Isaac Mwang*

The ***minimum income guarantee mechanism*** is envisioned to support the sale or leasing of productive uses equipment, which are usually outside the scope of PAYG schemes due to their high capital costs and risks of default. A minimum income guarantee could be used to supplement customer repayments (which could fluctuate depending on seasonality or other factors) and ensure that the DESCOs stay above the minimum threshold of commercial viability in terms of income.

A ***return and default results-based framework*** incentivises the return and repossession of unutilized equipment, which could lower costs of defaults for the DESCOs and make their operations more sustainable. The scheme could help to create an efficient secondary market for refurbished systems no longer in use, while also potentially creating local employment opportunities and kickstarting a circular economy focused on the recycling of used systems. The scheme would give already non-paying customers an incentive to return (and received a deposit back) instead of keeping unused equipment, especially if they are no able to manage the payments. Less stranded assets and electronic waste is an additional positive impact of this mechanism.

4.3.5. Lessons Learnt

Risk transfer mechanisms can make energy projects commercially viable in humanitarian settings by shifting the risk-return ratio and reducing the cost of capital.

Risk transfer mechanisms can be tailored to address specific problematic risks for a given type of project, ensure funds are channelled to where they are most needed, thereby unlocking a hurdle preventing private sector engagement. In addition, a single local, regional, national, or global guarantee can enable the development of more than one project.

Guarantee mechanisms can, however, generate moral hazards and adverse incentives that must be considered in the project's design, implementation, and MRV phases. The biggest adverse incentives are: non-paying customers having little incentive to resume payments; over-incentivising product repossessions (where DESCOs rush to seek compensation for delinquent contracts); trouble targeting the right populations (e.g. IDP versus host community); underreporting successes (especially where system sales data are not used as a baseline); repeatedly reporting the same defaults; and overstating the level of defaults in the case of portfolio approaches. These adverse incentives can be partially counter-balanced by effective MRV programs. In practice, however, MRV is also costly and presents its own challenges in terms of ensuring 100 percent accuracy of results.

In general, guarantee mechanisms are fairly complex and require significant time and investment to set up, with engagement from multiple stakeholders to ensure a context-appropriate design and prudent implementation strategy. If, however, structured and administered well, they do have the opportunity to remove specific barriers or risks from the market and attract new market participants to otherwise underserved areas.

Loan guarantees lower the risk of lending to small businesses. However, the primary constraint at the lender level is the lack of relevant products, trained staff, and an outreach strategy, which can result in a block to accessing credit.

Though quite effective for high-risk situations, insurance mechanisms can be expensive and may not therefore be applicable or appropriate for all situations.

4.4. Market incentives

4.4.1. What are they and how do they work?

Market incentives aim to support investment with high-impact outcomes in situations where normal market conditions do not exist, for instance, in a refugee settlement. In doing so, they look to create commercial markets where they did not originally exist by encouraging capital to move into areas with humanitarian and/or development needs. Such incentives are particularly important to markets that require innovative solutions to deliver impactful products and services.

Market incentives are generally structured as a guarantee for payments against products and services based on performance or supply, or in exchange for upfront investment in new or distressed markets. Examples include Results Based Financing (RBF), impact bonds and challenge funds, among others. The following sections provide an overview and examples of RBF, impact bonds and challenge funds.

4.4.2. Results Based Financing

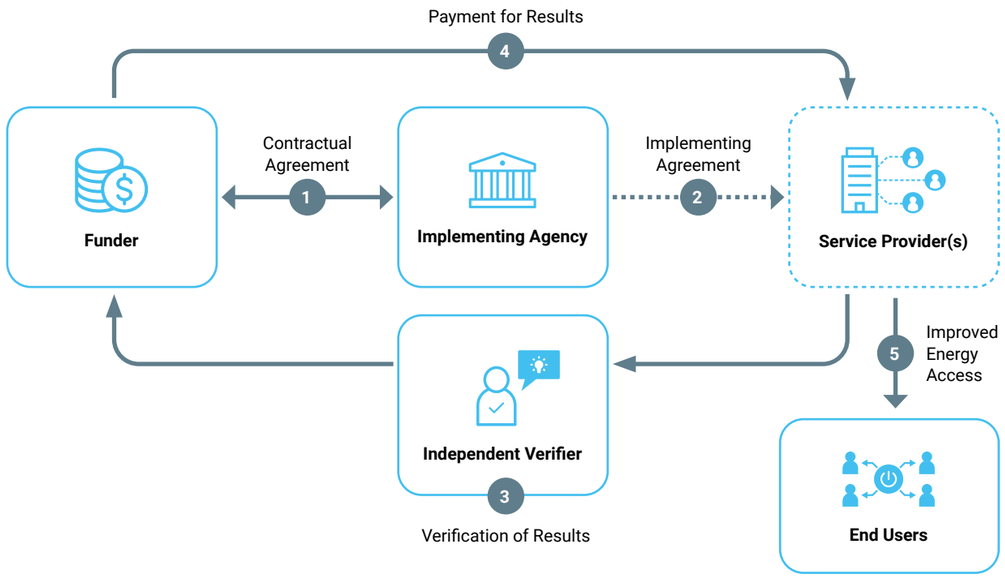
WHAT IS IT AND HOW DOES IT WORK?

Results Based Financing (RBF), commonly referred to as 'payment by results' is an umbrella term referring to any program or intervention that provides rewards to individuals or institutions after agreed-upon results are achieved and verified (World Bank, 2019).

RBF involves three key principles. Firstly, payments are made only after the results have been achieved. Secondly, the recipient may independently choose how to achieve these results. And lastly, an independent verification of the results triggers the agreed financial disbursements (Sida, 2015). The rationale behind this approach is to directly link financing with outputs and outcomes rather than inputs and processes. The objective is to increase accountability and create incentives for service providers to improve programme effectiveness and achieve agreed results while providing the service providers with the autonomy and flexibility to adjust their project implementation strategies to deliver the most impact (OECD, 2014). Therefore, results-based approaches shift the financial risk associated with the non-delivery of results from the donor to the recipient of the funding.

RBF schemes begin with a contractual agreement between a funder (donor) and an implementing organisation who both agree on the outputs, outcomes and impacts that are desired. The implementing party either launches the program or intervention themselves or invites third party service providers to participate in the delivery of the solutions. Once the results are verified by an independent body, the payment or incentive is released by the funder to the the service provider(s) as noted in the contractual agreement. A pictorial overview of RBF is presented in Figure 9.

Figure 9: Overview of Results Based Financing



In contrast to traditional funding approaches, RBF can drive innovation that leads to greater impact for beneficiaries and lowers the costs for funders (GPRBA, 2020). It is also regarded as being a reliable financing mechanism once its purpose has been clearly defined.

There are many different approaches to RBF, including output-based aid, outcomes-based aid, and impact bonds. Impact bonds are discussed in more detail in the following section. Output-based aid is a financial mechanism that aims to increasing access to products, goods and services that result in changes relevant to the desired output. It is used in situations where people are being excluded from basic services because they cannot afford to pay the full cost of a service or associated connection fees. Outcome-based financing includes mechanisms that tie funding to metrics more closely related to the ultimate development objective, i.e., 'outcomes' as opposed to intermediary results, such as system actions, inputs, activities, and outputs.

Figure 10 provides an overview of the triggers for RBF financing.

HOW CAN IT BE APPLIED TO DISPLACED SETTINGS?

Output-based aid could be used to target displaced household connections to a solar mini-grid or increase sales of clean cookstoves within a displacement setting. While outcome-based financing could be tied to humanitarian programmes that reduce the amount of greenhouse gasses, upscale and replicate new business models or technologies, or reduce household cost from shifts in spending on cooking fuels.

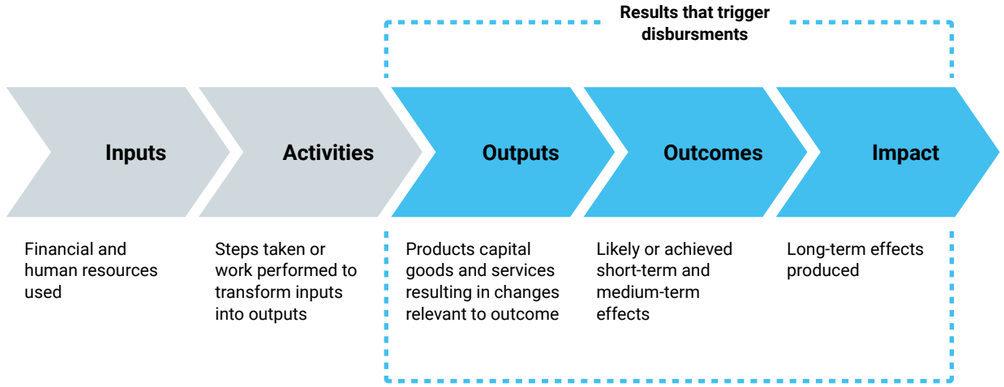
EXAMPLE PROJECT: SNV NETHERLANDS

Foundation of Netherlands Volunteers (SNV Netherlands) is a non-profit international development organisation that was among the first organisations to successfully implement RBF schemes to support modern energy services in displacement settings and for isolated off-grid communities.

In Mozambique, SNV is leading the implementation of BRILHO – a five-year programme started in 2019 to increase energy access. BRILHO's main goal is to improve energy access for both people and businesses within the low-income population, leading to financial

Figure 10: Overview of RBF Triggers

Adapted from OECD, 2014



savings, better well-being and increased livelihood opportunities. The program is targeting three product segments: improved cooking solutions, SHS and mini-grids and hopes to impact as many as 1.5 million people. To reach this target, BRILHO works with selected companies to provide a mix of catalytic grants and RBF in order to reduce the risks associated with providing energy solutions to low-income markets (e.g., default risk, etc.) and ensure an attractive commercial return.

The BRILHO programme pays a participating company a cash incentive of around 40% of the product cost (base amount) for each sale of a designated energy access product to a rural customer after submitting proof of sale, which a third party usually verifies. On top of this base amount, BRILHO provides additional bonus incentives for products that provide a higher tier of energy access (based on the Energy Sector Management Assistance Program Multi-tier framework), for sales in underserved areas, or for sales of products intended to be used for productive uses and income generation. Underserved areas are categorized and ranked based on a Vulnerability Access Index. By June 2021, BRILHO had reached over 33,000 clients/households across the country and supported the purchase of a SHS.

LESSONS LEARNT

RBF schemes can be very effective at incentivising market participants to enter underserved areas such as displacement settings by focusing attention on the delivery of results, and by creating a conducive environment for adaptation and experimentation. Although they may be less effective than conventional approaches if the recipient lacks the capacity, incentive, or access to capital necessary to deliver the agreed outputs or outcomes (ESMAP, 2015).

RBF can reduce the time and resources that humanitarian partners spend monitoring processes and checking that resources are being spent appropriately. While the value of measuring outcomes may be apparent, what is less clear is how to go about doing it, as measuring outcomes is not easy. As a result, greater expenditure may be required on independent verification. In addition, in situations where there are multiple incentive schemes available, there is a risk of double-dipping or over-incentivising the market, leading to adverse consequences such as manipulation and fraudulent claims. It has, however, been argued that RBF can reduce the risk of corruption, as money is only disbursed when results are delivered.

While RBF addresses the supply side for energy products and services in underserved markets, it does not increase the affordability of products for bottom-of-pyramid customers in displacement settings. In order to mitigate this challenge, RBF should be bundled with other mechanisms which can support the lowest-income customers, such as loan guarantees, flexible payment terms, payment financing, PAYG models, and guarantee funds for defaulting accounts.

RBF programmes should also be combined with minimum product standards and quality approval policies to ensure that the products sold meet international standards and do not create an adverse incentive for the dumping of sub-par products onto low-income markets.

4.4.3. Impact Bonds

WHAT IS IT AND HOW DOES IT WORK?

Impact bonds are outcomes-based contracts. They use private funding from investors to cover the upfront capital required for a provider to set up and deliver a service. The service is designed to achieve measurable outcomes specified by the commissioner. The investor is repaid only if these outcomes are achieved.

Impact bonds bring together three key partners to deliver better outcomes for a target group: the outcome payer, the service provider, and the investor.

Social impact bonds (SIBs) refer to impact bonds in which the outcome payer is the government which represents the target group. Development impact bonds (DIBs) refer to impact bonds in which the outcome payer is an external donor - an aid agency of a government or multilateral agency or a philanthropic organisation (Global Outcomes Lab, 2021).

HOW CAN IT BE APPLIED TO DISPLACED SETTINGS?

Impact bonds may not be best suited for conflicts or fast-moving crises as they can take too long to set up. They could, however, support protracted humanitarian situations, especially projects aimed at providing infrastructure or delivering services, including those associated with energy (New Humanitarian, 2019).

EXAMPLE PROJECT: ICRC'S HUMANITARIAN IMPACT BOND

In 2017, the International Committee of the Red Cross (ICRC) launched the first "Humanitarian Impact Bond" (HIB) with the goal of financing the construction of three new physical rehabilitation programme centres in Mali, Nigeria, and the Democratic Republic of Congo. The HIB mechanism allowed ICRC to mobilize 26 million Swiss francs of social investments from the private sector to support these rehabilitation programmes and directly benefit tens of thousands of persons with physical disabilities due to conflict within these three countries (ICRC, 2017). The HIB is structured similarly to a loan but with added incentives to drive positive outcomes and penalties for poor performance.

The "Outcome Funders" comprised of the governments of Switzerland, Belgium, Italy, the United Kingdom, and the La Caixa Banking Foundation based in Spain. They pledged to pay ICRC for the concrete results achieved over a period of five years. This impact was measured using an output metric called Staff Efficiency Ratio (SER), which is calculated by the number of beneficiaries having regained mobility thanks to a mobility device, divided by the number of local rehabilitation professionals employed by the centres. "Social Investors" initially loaned the ICRC the money required for the project and comprised of New Reinsurance Company (a subsidiary of Munich Re), Lombard Odier pension fund, and several other charitable foundations (Ecorys, undated).

At the end of the five-year term, the Outcome Funders pay ICRC, based on the results measured and impact assessed. Using the funds received from the Outcome Funders, ICRC then repays the Social Investors. In the best-case scenario, if there is an 80% or greater performance improvement in the SER ratio compared to previous rehabilitation centres, the investors will earn an annual return of 7.0% per year (34.5% over five years). In the worst-case scenario, the investors can lose up to 11.3% per year (or 40% overall) if the SER performance worsens relative to the benchmark (Ecorys, undated).

LESSONS LEARNT

Impact bonds are relatively complicated when compared to other financing mechanisms. They take time to develop, resulting in higher administrative costs (Princeton University, 2014). They are, therefore, best suited for multi-year, longer-term projects that can contribute to achieving durable solutions. As soon as the metrics have been established, however, and awareness is raised, the costs of developing impact bonds should reduce (UNDP, 2016). The model of payment for success does, however, spare funders the cost of failed programs.

In addition, impact bonds should be developed to meet a specific need. In the case of the ICRC HIB, it was first decided to use a HIB, which then lead to the development of the project.

There needs to be flexibility in terms of understanding of what an impact bond is. Not all components will be applicable to all contexts and organisations. Organisations take part in impact bonds for different reasons, and the impact bond needs to be adapted with this in mind. Investors do, however, want to be involved earlier, so that they are able to feed into the design of the terms and conditions of the IB.

It is unlikely to see many projects similar to the ICRC as most organisations in the United Nations or typical NGO's are not allowed to enter into any financial agreements that are similar to a loan.

4.4.4. Enterprise Challenge Fund

WHAT IS IT AND HOW DOES IT WORK?

An enterprise challenge fund is a funding instrument that operates by distributing grants (or concessional finance) to profit-seeking projects on a competitive basis (UNDP, 2016). The competition for funding is usually focused on a broad sector, such as energy, to solicit innovative proposals that may not otherwise be discovered through more traditional grant-making or funding mechanisms.

Such a fund supports private investment with a measurable social and/or environmental outcome. A challenge fund will typically utilise public sector or private foundation funds for a competitive market-based or incentive-driven solution. As such, enterprise challenge funds help mitigate market risks, while "challenging" the private sector to innovate for the public good.

The grants (or concessional finance) are risk-sharing subsidies since the private firm co-invests its own resources. Challenge funds can thus leverage public financing to achieve better developmental outcomes, while influencing market behaviours through demonstration and imitation effects. The latter is linked to the promotion of sustainable and inclusive business by influencing the private sector to adopt business models that respond to the needs of the poor (UNDP, 2016).

Three elements characterise challenge funds. Firstly, the private sector drives the solution's design, co-financing and implementation. Secondly, grant funding is awarded through a competitive process. And lastly, the "challenge" provides a broad development and commercial focus that awards innovation.

Once capitalized, challenge funds operate through calls for proposals, which are assessed competitively and according to established criteria. Performance-based grants or concessional financing is offered to the best proposals.

HOW CAN IT BE APPLIED TO DISPLACED SETTINGS?

An enterprise challenge could be used in displacement settings to engage the private sector in addressing the challenges in such locations. In doing so, the results can

build the case for the private sector to lead solutions, help identify, test, and scale solutions and advance the humanitarian principles of humanity, neutrality, impartiality and independence (Humanitarian Grand Challenge, 2021).

EXAMPLE: HUMANITARIAN GRAND CHALLENGE

The Humanitarian Grand Challenge aims to provide funding to "life-saving or life-improving innovations to help the most vulnerable and hardest-to-reach people impacted by humanitarian crises caused by conflict." The funding is focused on innovative solutions that provide, supply, or locally generate:

- Safe drinking water and sanitation;
- Energy;
- Life-saving information; or
- Health supplies and services.

Innovations could come from companies or not-for-profit organisations and must include input from the affected communities they seek to serve. Preference will be given to locally-lead solutions to support people living in areas with active conflict, people who are internally displaced by conflict or refugees. In addition, innovations that focus on people who are vulnerable in conflict-affected humanitarian crises will be prioritised, such people who are particularly vulnerable due to their gender, sexuality, religion, age, or income; people with disabilities, chronic health conditions; as well as people who are stateless, minorities, or unable to evacuate to safety.

The Humanitarian Grand Challenge seeks out new promising innovations and looks to support the scaling of solutions that are proven to work. Achieving this requires a holistic approach where critical barriers to market growth and expansion are addressed.

The Humanitarian Grand Challenge is funded by the US Agency for International Development, the UK Foreign, Commonwealth & Development Office, the Government of the Netherlands Ministry of Foreign Affairs, and Global Affairs Canada.

As of August 2021, 21.3 million USD has been invested in 52 innovative solutions in 23 countries. There is no specific breakdown of funding for energy projects under the Humanitarian Grand Challenge. It was, however, noted that the challenge fund had supported 11 proof of concept energy projects in nine countries (DRC, Kenya, Nigeria, South Sudan, Sudan, Syria, Turkey, Uganda, and Yemen) and one scale-up energy project in DRC.

Over the past three years, the GPA Coordination Unit has been involved in the review of applications for energy. During this study, no documentation on lessons learnt from funded energy projects were identified.

EXAMPLE: KAKUMA KALOBEYEI CHALLENGE FUND

The Kakuma Kalobeyei Challenge Fund (KKCF) is a program of the International Finance Corporation, implemented by the Africa Enterprise Challenge Fund, Turkana County Government, and UNHCR. From October 2020 to September 2024, the five-year program is designed to support private sector investment and unlock the economic potential of refugees and their hosts, in Kenya's Turkana County. The 25 million USD initiative is supported by the:

- EU;
- Kreditanstalt für Wiederaufbau (KfW - German Development Bank);
- Netherlands Ministry for Foreign Affairs;
- Swiss Agency for Development and Cooperation; and
- UK Foreign, Commonwealth & Development Office.

The KKCF aims to increase the economic integration and self-reliance of displaced populations and the local host community. The objectives of the initiative are to:

- Attract new private businesses and social enterprises to the Kakuma-Kalobeyei area, which should lead to better employment opportunities for refugees and the host community, increase access to goods and services, and potentially reduce prices;
- Provide opportunities to scale-up the operations of private companies and social enterprises already present in the area;
- Develop and grow refugee and host community-owned businesses and create opportunities for women and youth; and
- Reduce the time and cost of obtaining specific business permits, licenses, and registrations in Turkana West by streamlining procedures (KKCF, 2021).

The challenge fund has been designed to inspire and motivate businesses, social enterprises, and local entrepreneurs to propose competitive and sustainable solutions to meet the challenges people living in the Kakuma and Kalobeyei areas are facing. By providing seed capital for companies with strong potential for growth, the fund hopes to de-risk the business concept, attract commercial funders, and support its long-term commercial viability. KKCF will address development challenges around, amongst others, access to capital and access to clean energy. Winners of the challenge fund can access between 250,000 USD and 750,000 USD, although the lower limit is reduced to 100,000 USD for projects run by women or youth.

Given the relatively new status of the project, there are at present no lessons to share. The set-up of the fund is very promising since it encourages long-term marked-based solutions, which are necessary in protracted crises. It would, however, be interesting to compare the results of a global fund with those of a targeted local fund.

LESSONS LEARNT

Enterprise challenge funds offer an effective means to engage the private sector with minimal market distortions. The results of which can be used to influence the behaviour of the private sector through systemic innovations and demonstration effects, as innovation is increasingly seen as an approach to solving development and humanitarian challenges. There is, however, a risk that innovative projects might be chosen over less ground-breaking projects with greater potential for impact (UNDP, 2016).

Usually, the proposals in a competitive process like a challenge fund are reviewed by external evaluators. They often have diverse backgrounds, have different levels of experience, and what they consider as 'innovative' may vary a lot. It is therefore advisable to invest time in exchanging views and 'levelling' the experience of evaluators. Unfortunately, this is often an underdeveloped component of the process.

Setting up a challenge fund does take up a significant amount of time and financial resources and is not cost-effective for a 'one-off' round.

Figure 11: *The Belecom team demonstrate and support the installation of their solar home systems (SHS) in refugee camps in Rwanda. They established community loan groups to promote financial resilience and assure the poorest households can afford the SHS. Photo: Practical Action / David Nkurunziza*

Providing guidance, as taken from the GPA's EDM Training Programme, on what makes a good 'proof of concept' and 'scale up' proposal could strengthen applications.

4.5. Using more than one blended financing mechanism

It may not be possible to address all the barriers, risks and market interventions associated with a particular energy intervention with one blended financing solution. One or more blended finance mechanisms, each targeted to a particular barrier, may be needed to support private sector lead solutions. A good example of this is the Renewable Energy for Refugees (RE4R) SHS project in Rwanda.

4.5.1. Renewable Energy for Refugees (RE4R) project

The RE4R project is a partnership between Practical Action (PA) and the UNHCR in Rwanda, and NRC in Jordan, funded by the IKEA Foundation. RE4R works in urban settings in Jordan and camp settings in Rwanda. The project aims to improve energy access by strengthening and supporting commercial markets; promoting economic activity for refugees and host communities; providing 'Total Energy Access' by targeting households, enterprises, and community service providers; and fostering change at systems level.

In Rwanda, RE4R partnered with two SHS suppliers, Bboxx and Belecom, to provide SHS to households in Gihembe, Kigeme, and Nyabiheke Refugee Camps. Bboxx and Belecom provided two different business models, products, and price points to address different market segments in the refugee camps. Bboxx aimed to reach households with mid to high levels of energy spending through subsidised prices. Belecom targeted households with mid-levels of energy spending by offering a smaller and cheaper system, with the potential to extend their business model to households with low levels of energy spending through a revolving fund. The revolving fund provides a group loan and savings facility for its customers. This revolving fund allowed participants to use loans to set up micro-enterprises (e.g., vegetable selling, food stalls, clothes trading) to boost household incomes and cover loan repayments and SHS monthly fees when household incomes were irregular. Cash-Based Interventions were in place in all three camps before the programme started, but cash for cooking fuel assistance was added in 2019 (Practical Action, 2021).

The SHS suppliers were supported by RE4R through a mix of blended finance mechanisms, with examples shown below.

- Direct funding to remove commercial barriers:
  - RE4R provided direct financial support to Belecom for the construction of their shops in the camps to reduce overheads that would impact the costs of their systems, which were aimed at households at the mid to lower end of household energy spending.
- Technical assistance:
  - Before engaging with the SHS suppliers, RE4R conducted an extensive assessment to gather data on the energy needs and preferences of refugee communities, their ability and willingness to pay, and existing spending patterns, which was shared with SHS suppliers during an Expression of the Interest engagement process to help them develop their offering. RE4R gathered data on what refugees spent on a monthly basis on non-renewable energy (batteries, candles, mobile phone charging, etc). This was then split into three bands of spending – higher, middle and lower.
  - RE4R also offered financial and technical assistance to address private sector knowledge gaps in working in displacement settings during the SHS supplier engagement process.
  - RE4R provided in-house staff training to sales agents, technicians, and customer support staff recruited from the refugee camps.
  - RE4R also provided a technical assistance grant to cover the costs of a consultant to support the design and implementation of Belecom's revolving fund.
- Mitigating risks:
  - Belecom products were aimed at lower-income households, many of which were subject to fluctuating income, often as a result of seasonal work. Belecom therefore was concerned about the risk of non-payment during lean financial periods and, as such, developed a revolving loan and savings facility for its customers. The RE4R project provided the seed capital for the revolving fund after successfully completing a pilot.
- Market incentives:
  - The Bboxx system was considered to be beyond the spending levels of the "high" market segment and therefore the cost of their system was identified as the main barrier to entering the market in the camps. As such, payments were made to Bboxx to subsidise the cost of their SHS.
  - Tranches of RBF were also released to Bboxx and Belecom based on them achieving pre-agreed milestones associated with their market development activities.

RESULTS

At the end of June 2021, 3,644 SHS were sold and installed in the three refugee camps in Rwanda through the RE4R project. The total amount of the blended financial mechanisms provided were weighted according to the market segments and sales targets each supplier aimed to reach. As a result of the project, customers observed improvements in their quality of life through domestic, livelihood and recreational activities and were able to maintain regular payments for the SHS. Bboxx has remained operational after PA funding ceased, providing after-sales support to its customers in the camps and more widely in Rwanda. Bboxx has released a smaller capacity, cheaper SHS to the market. Belecom sales are still ongoing and are in the transitioning phase with promising signs that the intervention will be sustainable once blended financing is no longer available.

LESSONS LEARNT

The business models of these suppliers, however, struggled to reach certain market segments due to the cost of the SHS and other barriers particular to certain vulnerable groups, including those households with the least income, the elderly, people with disabilities, and those unable to work. It was also noted that the refugee-wide cash-based intervention has supported the purchasing power of the households and has been a critical factor in the business models of both suppliers.

The next phase of the project aims to ensure the sustainability of the SHS market in the long-term while considering additional, targeted support to reach more vulnerable groups, and provide advice and advocacy on market-based approaches for renewable energy solutions to the national government private sector and other humanitarian stakeholders.

Based on the lessons learnt, Practical Action has suggested the following future improvements to the programme:

- Restructuring the subsidies so that they can be targeted towards lower-income households.
- Balancing payment milestones across business model activities to incentivise longer-term commitments and continued customer satisfaction, such as repair rates and the management of late payments. The initial results-based element of the programme was weighted towards managing the early project costs borne by the private sector partners.
- Working with the private sector partners with regards to building trust so that they can share commercial information with the funding partner and help unlock what level and type of funding are needed to better balance financial risks, private sector investment and funding support in a transparent way.
- Ensuring the funder and the private sector partner have a shared vision for the future of the market and their business model after the funding ends. This includes a shared understanding that the funding is not a grant in the traditional sense but a partnership to deliver sustainable energy solutions in challenging markets, using blended finance mechanisms to address specific barriers for the context.

5. Conclusions, recommendations and next steps

5.1. Conclusions

With the possible exception for the provision of technical assistance, there is limited experience in using blended finance mechanisms to deliver SDG7 in displacement settings. Where there is experience, it tends to have a narrow geographic focus, be project driven, time-bound and limited to a handful of actors and therefore, the underlying system and principles that perpetuate the dominance of traditional grant funding remain. As such, ***where blended finance solutions have been deemed to be successful, they have not resulted in replication or scaling up*** in a manner that delivers sustainable solutions in neighbouring displacement settings, in other countries and/or through other humanitarian partners.

Nonetheless, there is a ***growing interest from private sector entities and financial institutions*** who see opportunities in participating in the energy transition and access initiatives as well as the emerging bottom-of-the-pyramid consumer markets for energy solutions.

Although examples of blended finance mechanisms in displacement settings that can provide crucial insights are emerging, ***more data and objective evaluation is needed*** if the risks and returns are to be appraised fully and future mechanisms structured appropriately (Cohen & Patel, 2019). There also appears to be a collective resistance to sharing results and business models publicly. This could be related to confidentiality agreements with private sector partners or with the simple fact that the results were no more cost-effective than a traditional approach. As a result, there is limited ability to compare the economic effects of the various instruments and to draw specific conclusions from the use of blended finance solutions in displacement settings, other than they provide a possible solution to the existing funding gap. The humanitarian sector would greatly benefit from ***greater transparency and sharing of data and lessons learned*** as new blended finance approaches are piloted and evaluated.

There does, however, appear to be an ***opportunity to partner with and leverage the experience of development actors*** delivering energy solutions through blended finance mechanisms to last mile, vulnerable and underserved customers, such as the United Nations Development Programme, the Organisation for Economic Co-operation and Development, World Economic Forum, and Energising Development. It is noted that typical 'development' focused energy projects no longer rely on grant-only models, there are, however, fundamental differences between the two sectors, including end-users in displacement settings not always having the ability to earn an income.

5.1.1. High-level lessons learned

Some high-level lessons have been identified from this study and wider knowledge of the topic, which include:

- Poor communication and coordination can lead to the free distribution of goods and services by well-meaning partners, which undermines the market-based approach being developed by another partner in the same displacement setting.
- There is a need for more to inform both policies and programming and to identify contexts where blended finance can play a lead role in delivering solutions or accessing new sources of funds. Concerted data collection and dissemination can also lead to better coordination amongst stakeholders.
- Change starts with the people. The humanitarian system has limited expertise with respect to both energy and finance. Historically, energy specialists were often focused on the technical aspects of project development, while using innovative finance models requires a deeper understanding of finance mechanisms and commercial modelling. Both skillsets will be needed to build internal capacity and deliver results.
- There are a limited number of blended finance solutions that specifically target the humanitarian sector, although there may be the potential to extend or adapt existing development focused solutions to displacement settings.
- Combining more than one blended finance mechanism to address the various commercial barriers and risks that exist within a particular market system may be appropriate.
- Cash-based interventions – and by association, the right to work and access to financial services, banking facilities and mobile payment platforms – have an important role to play in bolstering the supporting ecosystem that the blended finance mechanisms are intended to work in.
- The humanitarian and private sectors (including financing institutions) have historically operated within two very different contexts. As a consequence, they communicate, and view risks and opportunities very differently.
- It can be difficult to balance concessional financing against private investment, given commercial confidentialities associated with individual business models.
- Some traditional humanitarian donors can only provide traditional grants at present. Many are also working with output-based success indicators (such as the number of people served), which may be a risky approach for implementing partners. As, at present, new innovative finance mechanisms remain largely untested with regards to their impact on the end-user.
- It is important to re-iterate that many innovative finance solutions are based on a model where the end-user is – at least partially – paying for the new product or service. Given that the displaced people are generally the poorest of the poor, these solutions do have their limitations.

5.2. Recommendations

5.2.1. Developing blended finance solutions

Given the limited experience in humanitarian settings, there is a need to ***test and develop blended finance solutions through pilots and proof of concepts***, with a strong focus on scaling up the mechanism once proven, and sharing knowledge and lessons learnt to a wide audience of stakeholders who can support and respond in similar contexts, including development actors. This will require a broader set of skilled specialists and increased project, process, and financial transparency, with a priority on independent verification, to ensure the associated challenges at each stage of the project are understood and the anticipated results are achieved.

The aim of the exercise would be to ***co-create, share and continuously improve*** the most promising approaches to blended finance in humanitarian settings and to highlight potential pitfalls to minimise repeated failures. Such an approach could be supported by donors, as a condition of their financial support.

5.2.2. More than Money

Due to the range of challenges associated with displacement settings, the strategic mobilisation of financing alone may not be enough to deliver sustainable energy solutions for such contexts. For any blended finance mechanism to prove successful, it is necessary to ensure cross-sectoral and industry involvement to maximise potential impact (Cohen & Patel, 2019). Consideration should therefore also be given to:

- ***Developing new energy delivery models and business models*** to take advantage of blended finance opportunities, incorporating lessons learnt from other sectors within the humanitarian response, such as those already developed by the Water, Sanitation and Hygiene (WASH) Sector.
- Improving the understanding of ***data needs, collection and interpretation*** with regards to developing blended finance solutions in displacement settings.
- The project proponent ***engaging the private sector early*** in the process to help develop blended finance solutions, especially with actors already working in the development sector or focused on delivering impact, which would also support the creation of a business and investment climate in a protection focused environment.
- Promoting an ***inclusive and participatory approach*** to the design and implementation of blended financing solutions, especially ones pertaining to energy access projects, where all stakeholders (including direct beneficiaries) can be engaged in the process and share vested ownership in the outcomes.
- Tailoring successful blended finance solutions to the local context, such as community needs and priorities, socio-cultural and ecological practices, and the domestic energy markets.
- Leveraging the lessons learnt and results from the deployment of market-based solutions within middle and higher-income households in displacement settings to target bottom of pyramid customers.

- ***Creating an enabling environment*** in a displacement setting that would support the development of a self-sustaining, private-sector-lead energy solution. This may require:
    - Policy interventions, such as supporting a displaced population's right to work or enabling a clear regulatory environment at the national level that could foster private sector confidence for commercial investment in displacement settings; and/or
    - Technical interventions, such as the development of mobile phone connectivity infrastructure to support the saving and transfer of money through mobile phone applications.
- ***Coordinating funders*** to reduce the potential for a fragmented response through global, multi-donor initiatives that would also benefit the desire to share experiences and lessons learnt.
- ***Educating humanitarian actors and private sector partners*** on the opportunities and shared benefits of using blended finance solutions and expected roles/contributions of each partner (i.e., it is not a grant but a risk-sharing mechanism).
- ***Focusing on effective partnering*** as blended finance solutions are based on collaboration, effective communication, trust and reliable partnerships across a diverse set of stakeholders.
- Developing a common working language and a shared approach to designing solutions that respects and includes the best aspects of both humanitarian and private sector approaches.

5.2.3. Additional skills, training and capacity building

Given the complexity associated with developing financial tools that transfer risk or provide market incentives, ***additional financial, legal, and commercial skills will be required*** on top of the existing need for energy specialists. Such skilled individuals may, however, have limited understanding or knowledge of humanitarian settings and may require some form of 'humanitarian induction training'. As noted above, humanitarian actors can also benefit from closer collaboration and partnership with development actors, who have many years of relevant experience and often launch new projects and programs in adjacent markets and geographies, sometimes using blended financing approaches.

To increase technical capacity to deliver blended finance solutions for energy in displacement settings, specialist deployment programmes, such as NORCAP, should consider ***increasing the scope of their technical advisory services***. In doing so they could offer a comprehensive blended finance service that not only includes energy specialists but also provides technical support for the financial, legal, economic and verification aspects of such projects.

In addition, existing ***energy specialists should be provided with training*** to increase their understanding of financial mechanisms, so that they can provide increased levels of support to projects that have an innovative financing component, including blended finance.

it is also important to ***build the capacity of the donor community***, who would eventually be funding these new instruments. This could be accomplished, for example, through a webinar series or other dedicated training sessions.

5.2.4. Ensuring inclusion of local solutions

Care should also be taken to ensure the additional complexity of blended finance solutions ***does not result in local solutions being excluded***, including those managed by the displaced communities.

5.3. Next Steps

5.3.1. Establishing a GPA task force on blended finance

The GPA Coordination Unit will continue to evaluate financial instruments and, where practical to do so, establish and coordinate a blended finance task force, comprising key actors with experience in delivering blended finance solutions and partners who have an interest and senior management buy-in to develop such solutions. The Task Force would include donors, UN agencies, NGO's, private sector representatives, financial institutions, NORCAP experts and end-users of energy products and services (i.e., displaced and host community members). The principal aim of the Task Force would be to ***co-design, forge project partnerships (humanitarian actor, funders, private companies and relevant government departments), seek funding for, implement, verify and share the results of pathfinder blended finance projects*** that could be scaled up to meet the needs in neighbouring displacement settings, in other countries and/or through other humanitarian or private sector partners.

A key component of the Task Force would be to ***help create and reinforce commercial markets in displacement settings*** by developing de-risking and market incentives that demonstrate commercial viability with minimum use of concessional funds, i.e., developing solutions that balance concessional financing against private investment. Consideration would also be given to identifying good practices that support the demand side of a sustainable energy market, e.g., cash-based interventions, the right to work, etc.

In addition, the Task Force could ***assess the need to develop global blended finance solutions*** in delivering sustainable energy solutions in displacement settings. And, where appropriate to do so, co-design and seek funding for those solutions.

Similarly, given that energy is a cross-sectoral issue, the GPA Coordination Unit will ***collaborate with other humanitarian sectors that are currently looking into blended financing approaches***, such as the WASH sector. Learnings could be shared, and, where relevant, common blended finance solutions could be used to improve access to basic services (not limited to energy) for the displaced populations and decarbonisation of humanitarian infrastructure.

The outputs and findings from the Task Force and from other blended finance projects, including those associated with challenge funds, would be promoted by the GPA and NORCAP networks through workshops and webinars to ***share knowledge and lessons learnt***. The aim of the workshops and webinars would be to increase the uptake of blended finance mechanism, highlighting common pitfalls, sharing experiences, methodologies and proformas with a view to continuously improving the approaches to deliver the expected impacts. Furthermore, the Task Force could help to ***identify and champion new opportunities to pilot blended finance solutions*** for the benefit of the wider community. It is also anticipated that an ongoing learning process, sharing of good practices and dialogue on potential pilot projects could lead to improved cooperation and transparency, which are essential at this time.

5.3.2. Developing a GPA/NORCAP toolbox

As a first step to supporting energy practitioners develop blended finance solutions, the authors and NORCAP energy specialists will ***co-develop a toolbox***. The toolbox would provide high level guidance on the topic and include a summary matrix showing which blended finance mechanisms are most suitable for different types of energy projects.

5.3.3. Further studies on building a supporting ecosystem

It is recommended that a ***study focused on supporting the demand side of energy projects is undertaken***. This study should focus on the role and experience of developing a 'supporting ecosystem.' It should, therefore, look at the role of livelihood programmes; cash-based interventions; access to finance and banking facilities; government policies on the right to work, freedom of movement, registration to support bank accounts, energy contracts, mobile phone contracts; infrastructure (mobile phone masts), etc. on market-based energy solutions. The findings of the study would be incorporated into the toolbox to provide additional support to energy practitioners.

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Authors and acknowledgements

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The authors would like to thank the following for input to, and/or feedback on, the report, including provision of photographs:

- GIZ ESDS: Megan Taeuber;
- GPA Coordination Unit: Thomas Fohgrub, Aimee Jenks and Sadiq Zafrullah;
- IOM: Eva Mach, Anais Matthey-Junod (NORCAP Junior Energy Expert) and Isaac Mwathi;
- NORCAP: Karina Fredly Sætre and Lama Gharaibeh;
- NORCAP Blended Finance Working Group: Teresa Le, Emmanuel Biririza, Borja Gomez Rojo and Mustafa Almomani;
- Practical Action: Laura Clarke and Louise Rowen; and
- UNHCR: Benoit Moreno.

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