

# Humanitarian

## Energy Outlook 2023

Progress, Possibilities, and Programmes



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This report is dedicated to the memory of Thomas Fohgrub, Strategic Lead of the Global Platform for Action on Sustainable Energy in Displacement Settings (GPA). Thomas was instrumental in shaping the humanitarian energy sector and developed many progressive ideas and arguments that are driving us forward today. We dedicate this outlook to him and his visionary and collaborative approach, which always brought organisations together to deliver change for the world's displaced people.

#### The GPA is steered by



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# Foreword

The Humanitarian Energy Outlook 2023 underscores the urgent need for sustainable energy solutions to address the growing crises of displacement, climate change, and inequality. With over **110 million** forcibly displaced people globally, 90% of whom are from climate-vulnerable regions, the lack of energy access exacerbates protection and health risks. Displaced populations lack access to essential services like lighting, education, healthcare, and communication, living in literal darkness without electricity.

The Global Platform for Action on Sustainable Energy in Displacement Settings (GPA) is committed to an inclusive energy transition, aligning with Sustainable Development Goal (SDG 7), and achieving net-zero emissions by 2050. The GPA aims to leave no displaced person behind. Sustainable energy offers lifelines in emergencies and supports social and economic activities that are a cornerstone to the self-reliance of displaced persons in protracted situations.

Renewable energy technologies and innovative financing can reduce short and long-term energy costs, create livelihoods, and provide green jobs. Collective action requires collaboration between humanitarian organisations, governments, development entities, the private sector, and energy experts. Real change demands partnership with displaced persons as active partners, not just beneficiaries.

Delivering sustainable energy and addressing climate impacts in displacement settings necessitate substantial investments, especially from the private sector through market-based approaches. While progress is underway, the recent Global Refugee Forum (GRF) 2023 and The United Nations Framework Convention on Climate Change (UNFCCC) and Conference of Parties (COP 28) provide opportunities to mobilise commitments essential for meaningful change in delivering clean energy in displacement settings. This outlook provides an analysis of the humanitarian energy sector as of the end of 2023, offering insights into energy access progress in the humanitarian energy sector across fundraising, research and evidence, the development of progressive policies, and capacity and skills enhancement. Additionally, it highlights improvements in prioritising the inclusion of displaced persons in energy policy planning and implementation. It emphasises the core obstacles facing the achievement of SDG 7 in displacement contexts and stresses the need for immediate and ongoing action to improve the lives of displaced people.



01

# Introduction

Displaced communities, including but not limited to refugees, lack access to clean energy, impacting their lives and livelihoods. In displacement settings worldwide, critical elements of energy access continue to lag significantly behind globally accepted standards. Energy services within displacement settings are frequently characterised by high costs, the use of polluting technology, and limited reach, especially compared to the energy access levels at the national level or the host communities in some cases. Refugee camps and settlements are often far away from primary power infrastructure and face barriers of policy and informality. The recent Global Refugee Forum 2023 and COP 28 are opportunities to mobilise both political and financial commitments that support the delivery of Sustainable Development Goal (SDG) 7, where displaced persons are put at the centre of clean energy policy planning and implementation in displacement settings.

Over the past six years, there has been slow but marked progress toward sustainable energy in humanitarian situations despite a multitude of global challenges. Notably, progress has been observed in acknowledging clean and modern energy for cooking to promote food security and sustainable development in humanitarian settings [1]. Both development and humanitarian players have increasingly recognised the critical role of clean energy access in effective responses to humanitarian crises. While significant global advancements have been made in pursuing SDG 7 in displacement settings, it is essential to recognise the presence of economic barriers, the extensive impacts of COVID-19, and the further complexities developed since Russia's invasion of Ukraine in 2022. These factors have not diminished the growing awareness and urgency of achieving sustainable energy for all in displacement settings, but they have posed challenges to progress.

Evidence from the World Health Organisation (WHO), World Bank, The International Renewable Energy Agency (IRENA), and Sustainable Energy for All (SEforALL) stress that nearly 1 billion people in low-income countries have unreliable or no electricity, which affects their essential services like medical care during childbirth and emergency response [2]. In South Asia and sub-Saharan Africa, more than 1 in 10 health facilities lack electricity, and its reliability is a problem for half of sub-Saharan African health facilities. Around 64% of healthcare facilities in low and middle-income countries urgently need greater access to energy. The World Bank estimates that an investment of USD 4.9 billion could drastically improve electricity access in healthcare facilities in 63 middle- to low-income countries, helping these facilities meet basic electricity standards. Such an investment would help unlock clean energy solutions like solar photovoltaic (PV) systems, which would significantly enhance public health and are cost-effective and quickly deployable [2].

The World Bank estimates that since February 2022, Russia's invasion of Ukraine could force 75 million individuals into energy poverty. The use of clean energy solutions, as well as efforts like the RescEU Energy Hub [3] provide crucial, though limited, support to Ukrainian refugees. Energy's vital role in crises is further understood in light of Russia's invasion of Ukraine, as it demonstrates the challenges of high imported energy costs on national responses to decreased aid and strained international ties [4]. United Nations Children's Fund (UNICEF) notes that reliable energy is crucial for child safety, healthcare, and protection services essential in humanitarian response and protracted displacement [5]. Thus, energy is not only essential in humanitarian responses but also crucial in protecting the most vulnerable among the displaced persons.

The Humanitarian Energy Outlook 2023 provides updates on and in humanitarian energy programmes, projects, funding, research, policies, and approaches from May 2022 – December 2023. The document highlights the necessity of renewable energy and efficiency improvements in displacement settings, advocating strongly for the involvement of forcibly displaced persons (FDPs) in humanitarian energy decision-making, planning, programming, and implementation.



02

# New Fundraising

Donor Commitments Spark a New Optimism for Humanitarian Energy Investment



As the demand for access to energy exceeds the available supply in displacement settings, there have been increasing pleas for support from the humanitarian community. This has yielded greater attention and has resulted in a greater number of international funding initiatives and opportunities. The following are some recent humanitarian energy initiatives that have received funding from various donor entities.

The German Federal Foreign Office has contributed to the Decarbonising Humanitarian Energy (DHE) Programme by providing €21 million in finance to advance the sustainable energy transition in displacement settings. This commitment serves as the primary funding for the DHE Multi-Partner Trust Fund (MPTF), a collaborative initiative involving the GPA, Norwegian Capacity (NORCAP), and the United Nations Development Programme (UNDP). The DHE Programme aims to reduce greenhouse gas emissions from diesel generators while providing humanitarian assistance across five countries in the Sahel Region.

Practical Action, through the IKEA Foundation-funded Renewable Energy for Refugees Programme (RE4R), has reached 83,000 people in Nyabiheke, Kigeme, and Gihembe refugee camps in Rwanda with clean energy. Now, with funding from the Swedish International Development Cooperation (Sida), Practical Action is extending its efforts to the country's five camps – Mahama, Kiziba, Mugombwa, Kigeme, and Nyabiheke, as well as their host communities, targeting 113,570 refugees and 34,070 members of host community members who will now have access to renewable energy [6]. The RE4R programme is exemplary: it has provided strategies applicable to organisations in displacement settings, focusing on creating refugee livelihood opportunities by enhancing energy access. Practical Action has supported the establishment of grid-connected business centres, implementing a direct subsidy model to support the uptake of solar home systems as well as improved cookstoves and pellets, supporting entrepreneurs in accessing credit from local financial institutions and savings groups, and involving both host and refugee communities in the maintenance and repair of energy systems to foster self-reliance in addressing technical challenges [7].

The Humanitarian Innovation Programme (HIP) has introduced several clean energy initiatives in Ugandan refugee camps. These initiatives encompass a solar drying system for year-round availability of fruits and vegetables, a repair centre for solar lanterns in Kiryandongo refugee settlement, energy-efficient cook stoves, access to agricultural residue-based briquettes for 8,000 households in both refugee and host communities, and solar-powered communal kitchens in refugee settlements [8].

In 2022 the International Committee of the Red Cross (ICRC) launched the Climate and Environment Transition Fund with an initial funding requirement of approximately USD 18 million aimed at transitioning ICRC operations to solar power in countries where it heavily relies on generator fuel, a move expected to save up to 140,000 tonnes of carbon dioxide emissions and USD 35-58 million over a span of 20 years [9].

The European Union (EU) Civil Protection and Humanitarian Aid Operations (ECHO) are actively participating in the EU's environmental efforts by promoting a cleaner planet and reducing their humanitarian operations' ecological footprint. The EU commitment includes mobilising a minimum of €1 trillion in sustainable investments over the coming decade. In 2023, the EU earmarked €78 million from its annual humanitarian funding for climate action [10].

The Solar Electric Cooking (SOLCO) partnership, led by Last Mile Climate, The United Nations Environment Programme (UNEP) Copenhagen Climate Centre, and the GPA – operating within the Global e-Cooking Coalition (GeCCo) – is committed to expanding clean and sustainable cooking solutions for displaced individuals and host communities in Africa, with its initial launch in Uganda. SOLCO aims to scale up solar-electric cooking solutions in at least eight African countries, providing a minimum of 250,000 households with affordable solar e-cooking by 2027 through an investment of at least USD 100 million. This involves establishing cooperative and franchise models, local ownership, technical support, and circular economy promotion in partnership with governments, civil society, and the private sector to create a financially self-sustainable model that aligns with key Sustainable Development Goals (SDGs) through international climate financing.

Despite these promising initiatives, the increasing nature of displacement calls for new approaches to ensure sustainable energy access in displacement settings in urban areas. Displacement settings in countries like Lebanon and Ukraine present a new challenge that requires a new approach. Recent humanitarian crises in Sudan and Gaza highlight how poor energy access conditions demand particular attention regarding energy policy planning and implementation. Today's global crises will continue to increase energy challenges unless energy planning, financing and investments are expanded equally to the challenge.

While we have witnessed a significant increase in attention and funding directed toward humanitarian energy, it is evident that this progress remains inadequate in the context of achieving SDG 7 and expediting the transition to net-zero emissions within displacement settings worldwide. The available funding falls far short of what is required to catalyse the shift towards clean energy for displaced persons and their host communities on a global scale. Despite the commendable efforts, the current funding levels underscore the urgency for enhanced commitment, collaboration, and innovative solutions to bridge this substantial gap. The journey towards achieving universal access to clean, affordable, and reliable energy in humanitarian contexts demands concerted efforts and a redoubling of resources to ensure that no one is left in the dark, literally, and figuratively.

## GIZ Activities on Energy Access

The German Corporation for International Cooperation (GIZ) programme Energy Solutions for Displacement Settings (ESDS) is crucial in providing clean energy solutions for displaced persons in various settings. This programme, sponsored by the German Federal Ministry of Economic Cooperation and Development (BMZ), is a key component of a global initiative supporting UNHCR in implementing the Global Compact on Refugees (GCR). ESDS delivers sustainable energy solutions to refugee and host communities in Ethiopia, Kenya, and Uganda, ultimately enhancing self-reliance. It uses market-based sustainable energy solutions to overcome existing barriers. Initiated in November 2018 with a funding commitment until December 2024 totalling €20 million, ESDS has actively worked to provide technical assistance to UNHCR, aiding in the finalisation of technical designs and comparative financial modelling for 25 project sites in Uganda, Kenya, and Ethiopia. These sites are scheduled for solarisation under the Green Finance Facility. In addition, 12 feasibility studies are underway for project sites in Chad.

In Uganda, ESDS works on results-based financing schemes for improved cookstoves and solar home systems, leading to the sale of 7,759 improved cookstoves and 946 solar systems to date. In Ethiopia, the ESDS team actively contributes to a national policy package encompassing policies on cooking energy, electrification, and e-waste in displacement settings. GIZ ESDS extends its reach to address e-waste concerns, implementing a market-based intervention to establish small repair shops. This initiative includes the safe storage of e-waste in West Nile Refugee settlements in Uganda, contributing to sustainable practices in the face of displacement.

## Mercy Corps Clean Energy Activities

Mercy Corps is an organisation with the mission to alleviate suffering, poverty, and oppression. It helps people build secure, productive, and just communities using clean energy provision. In 2022, Mercy Corps entered a new collaboration with Energy Peace Partners (EPP) to promote clean, sustainable, and cost-effective energy solutions within the humanitarian contexts where both organisations operate, with an initial focus on Ethiopia. This partnership explores the potential market feasibility of the Peace Renewable Energy Credits (P-RECs), aimed at expediting the adoption of renewable energy sources in regions affected by conflict [11]. P-RECs are a premium category of International Renewable Energy Certificates (I-RECs). Each P-REC signifies one megawatt-hour of renewable energy production. Notably, P-RECs carry an extra designation, certifying the peacebuilding co-benefits of the project. These credits monetise both the environmental and socio-economic attributes of renewable energy initiatives, offering developers an additional revenue source.

In Ethiopia, Mercy Corps is implementing the Enter Energy Project (2020-2025). The project focuses on providing renewable energy services to establish sustainable business models for affordable and continuous renewable energy services, shifting away from poor-quality products. With USD 10 million in funding from Shell, the project also contributes to decarbonising humanitarian operations.

In Niger, Mercy Corps is implementing a USD 1.5 million project called ALHERI (2021-2023), in partnership with UNHCR's Villages of Opportunity. ALHERI supports Nigerian refugees and host communities affected by conflict in Northwest Nigeria through enhancing energy access, preventing gender-based violence, and supporting livelihood activities and education.

Another project, PUMP UP (2023 – 2026), aims to enable farmers in Northern Uganda to build resilient livelihoods and adapt to climate change impacts. In partnership with Tulima Solar and Simusolar, it provides quality, sustainable, and affordable energy services to 3,720 farmers. The project is funded with USD 2,617,480 from the Danish Government (DANIDA).

Mercy Corps projects have employed about 100 displaced persons. However, they have gaps in their available resources to extend their reach. Mercy Corps views access to affordable renewable energy as a catalyst in its ten-year strategy, Pathway to Possibility. The organisation is committed to collaborating with stakeholders to develop sustainable solutions aligned with SDGs, recognising localisation as a driving principle.

# Impact Story

## *Okapi's pioneering work in promoting clean energy access in Kenya*

Okapi Green Energy, led by Vasco Hamisi, is an inspiring success story of a refugee energy entrepreneur. Providing clean, reliable, and affordable energy solutions has positively impacted the lives of refugees and host community members in Kakuma Camp, Kenya, showcasing the potential for refugees to contribute to sustainable development. Vasco Amisi, a Congolese refugee, and Okapi's founder, embodies resilience and innovation, contributing to achieving Sustainable Development Goal 7 in displacement settings.

Overcoming the challenges of starting a business as a refugee, Vasco founded Okapi in 2018, initially serving 150 households and 50 businesses with clean electricity through a solar mini-grid. With support from the United States Agency for International Development (USAID), Energias de Portugal (EDP), Mastercard, and partnerships with organisations like GIZ, Okapi is expanding its reach through a joint venture with Renewvia to increase a solar mini-grid in Kalobeyei to 2.4 MW and running a training programme to equip 750 displaced individuals with technical skills. Despite challenges, like a lack of funding, scarcity of well-trained technicians, insufficient land for operations, and difficulties in obtaining legal registration – compounding to challenges in attracting investors – Okapi's success and vision highlight the transformative power of energy access in displacement settings.





03

# New Evidence

Initial Data Highlights the Scale of the Energy Access Challenge

Recent research and studies have shed light on various aspects of energy in displacement settings, underscoring the pressing need for sustainable solutions to meet energy demands for the benefit of displaced people and host communities. While renewable sources, particularly solar mini-grids, and solar home systems, present viable solutions, there are still knowledge gaps to showcase the significance of the challenge and actual required investments to attain sustainable energy for all in displacement settings. Research has highlighted the significance of renewable energy in humanitarian contexts and the necessity of bridging knowledge gaps, enhancing the evidence base, and fostering best practices for sustainable energy. This section explores recent research findings and initiatives shaping the humanitarian energy landscape.

Despite increasing attention on improving energy access in displacement settings, electricity and clean cooking access rates have not meaningfully progressed. In 2015, Lahn and Grafham estimated that 89% of forcibly displaced individuals living in camps lacked access to adequate electricity for lighting, with 77% relying on biomass, mainly wood, for cooking [12]. After eight years, as more data on energy supply and usage has become available, the situation appears to have deteriorated, or the reality of the issues has become more accurately known. As of 2022, similar work reassessing the global picture found that 94% of camp residents lack meaningful electricity access, while 81% depend on basic polluting cooking fuels [13]. This research by Chatham House also found that only 11% of displaced persons living in camps have access to energy, and 9 out of 10 lack access to sustainable lighting [14].

Incorporating circular economy principles such as designing products for recyclability, encouraging reuse, and focusing on efficient operations and repair processes into approaches to improving energy access is essential across the board for long-term sustainability. It is also an area in which innovations in displacement settings may contribute to the broader SDG 7 agenda. Given the interests of displaced persons host countries, donors, and humanitarian agencies in reducing environmental footprint and encouraging self-reliance amongst displaced communities, there is an opportunity to advance the circular economy agenda for renewable energy systems [15].

From increasing the sense of safety of Rohingya refugees in Bangladesh [16] to enabling livelihood opportunities for both refugees and host communities in Kenya [17], the increased realisation of the importance of energy in humanitarian response is now attracting research interests. Previously neglected as an area of study and data collection, humanitarian energy sector research has gained momentum, accumulating over 320 dedicated publications [18]. Despite such recognition, evidence on the levels of energy access and use of energy technologies for both displaced people and host communities remains scarce, mainly due to the challenging social, economic, and political environment for affected communities.

A 2022 study used energy modelling to investigate the potential for solar mini-grids to provide electricity access in refugee camps in Sub-Saharan Africa [19]. It found that 154 gigawatt-hours of electricity per year would provide power for approximately 300 refugee camps, serve 1.15 million households, support 59,000 small businesses, and meet the needs of around 7,000 institutions. The cost for such a significant improvement is relatively low: relying on solar mini-grids to meet this energy demand, the study estimated that an initial investment of about \$1 billion could reduce approximately 2.86 million metric tons of carbon dioxide equivalent emissions over a 20-year period.

Other research indicates a disjointed state of knowledge within humanitarian contexts [20]. This research shows that there is an unequal focus on different forms of energy, with some solutions receiving more attention than others: for example, solar lanterns and cookstoves receive comparatively more attention than solar home systems, streetlighting, mini-grids, and national grid connections. This leads to some technologies becoming overemphasised, while other essential aspects remain disregarded. Thus, more research is required to explore the potential energy benefits of overlooked energy options in displacement settings.

In addition to the above, there is evidence linking climate change to migration, especially concerning the gradual effects of climate change [21]. Though the humanitarian response's contribution to climate change is minimal, the detrimental health and local ecological impacts caused by displacement are serious and reduce resilience to climate change. Humanitarian agencies contribute to emissions through their use of diesel fuels, flights, and transport. However minimal this may be considered in the global context, reducing their GHG emissions should fall both under the humanitarian principle of “do no harm” and act as a critical emblem of the sector's commitment towards achieving SDG 7 in displacement settings. Reducing emissions from within displacement settings is a social, environmental, and economic endeavour, and plays a valuable role in reducing the risk of further climate-related displacement.

Humanitarian agencies commonly use diesel generators to provide energy in displacement contexts to meet critical needs. These can result in increased costs and greenhouse gas emissions. Research indicates that integrating solar panels and battery storage into existing diesel-powered systems can yield substantial savings [22]. This presents a chance to provide humanitarian operations with electricity, reduce costs, decrease emissions, and where local regulations allow provide electricity to displaced communities and support meaningful livelihood prospects [22]. As diesel generators may remain in place for many years, for example to provide backup power to critical operations, a hybrid solution in which renewable sources provide the majority of power should be embraced as part of the clean energy transition.

According to UNHCR's assessment across 25 countries in Sub-Saharan Africa, North Africa, and the Middle East, 15% use clean cooking, while 45% of water pumps and 44% of health facilities aided by UNHCR run on solar power [23]. While this indicates progress, it is evident that the energy access situation for refugees and internally displaced persons (IDPs) is still substantially lacking.

Aiming to consolidate the status and opportunities for sustainable energy access across a variety of contexts, the Roadmaps for Energy Access in Displacement Settings (READS) Programme – implemented by the GPA Coordination Unit and funded by the IKEA Foundation – works to highlight opportunities for new investments. The programme will span across ten displacement-affected countries over a two-year period. In 2023, the READS Programme hosted stakeholder workshops in Kenya, Uganda, Rwanda, Lebanon, and Ethiopia to bring together stakeholders working on sustainable energy in displacement settings and co-design viable project concepts for implementation. Each roadmap report is written in partnership with a local implementing organisation and is co-authored by researchers with lived experience of displacement. Despite the difference in contexts, similar themes have emerged from across the READS Programme: the availability, affordability, and acceptability of sustainable energy technologies remain critical challenges to their uptake; support for the private sector through de-risking mechanisms, blended results-based finance and streamlined authorisations should be used to support companies in providing energy products; and community members should be central to the decisions related to how displaced people access energy for cooking, lighting, productive uses, and social institutions. The READS Roadmap reports from the Programme's first phase, covering Kenya [24], Uganda [25] and Rwanda [26] highlight specific project concepts and opportunities for inclusive investments in sustainable energy, and foster collaborations to provide clean energy for a more equitable and sustainable future.

While there has been notable progress in research and the accumulation of evidence supporting the transition to clean energy and inclusive investments in displacement settings, it is evident that significant gaps remain. High-level studies have estimated the magnitude of the issues – both in terms of rates of energy access and the required scale of potential solutions – but remain reliant on best guesses owing to a lack of detailed or up-to-date information about specific situations, camps, countries, and contexts. Certain energy technologies, countries, and approaches receive disproportionate attention, whilst innovative solutions to emerging issues, such as e-waste and circular approaches, have been focused on relatively little. While there are still significant gaps in the evidence base for sustainable energy in displacement settings, the level of knowledge and expertise has never been greater, driven forward by a range of research activities.

To truly drive substantial change towards sustainable energy transitions, there is a critical need for further investments in research and the generation of reliable and comprehensive evidence. This evidence will guide well-informed and substantive investments, policies, and initiatives to support sustainable energy in displacement settings. The journey toward universal access to clean, affordable, and reliable energy in humanitarian contexts is far from over, and it requires a continued commitment to generating research and evidence that are well-founded to enable informed clean energy policy planning and implementation.







04

# New Policies and Progress on Planning

National Commitments Demonstrate Slow Progress

Progressive, sustainable, and inclusive humanitarian energy policies are crucial aspects of the energy transition in displacement settings. Given the fact that 75% of forcibly displaced people are hosted in low and middle-income countries [27] where energy policies, programmes, and infrastructure are limited, it is paramount to embark on creating a conducive and enabling clean energy policy environment for displacement settings. Such policies are vital for addressing displacement as a major development challenge and promoting positive change for displaced people.

To achieve this, energy policies with a progressive outlook must account for the specific needs and challenges faced by displaced people, who often lack access to essential energy services. These policies should prioritise providing clean and affordable energy for cooking, heating, and lighting and offering renewable energy training and employment opportunities. Additionally, implementing energy-efficient standards in displacement settings, engaging displaced populations in energy planning, and aligning progress toward sustainable energy access with Nationally Determined Contributions (NDCs) are essential. Integrating these considerations into energy policy planning at all levels is critical for promoting sustainable energy, thereby enhancing the well-being and resilience of displaced persons, and addressing both the environmental and social dimensions of the energy transition.

In this context, the GPA is actively advocating for humanitarian energy on the global stage, including bringing this topic to discussions at international forums such as COP and advising host governments to include the energy needs of displaced persons within their NDCs, National Adaptation Policies (NAPs), and energy policies [28]. Such comprehensive energy policy planning aligns with the principle of 'Leaving No One Behind'.

In August 2023, UNEP and International Organisation for Migration (IOM) published a policy brief highlighting the needs and opportunities to strengthen the strategic and operational bridges between the humanitarian, development, climate change, and environmental fields [29]. It also emphasises the importance of integrating displaced populations into national climate change policy and planning. The brief showcased the importance of marrying policies related to mobility, human displacement, climate, the environment, energy, and development.

Still, planning for sustainable and inclusive energy policies in displacement settings presents considerable challenges during times of crisis. Usually, progress toward transitioning to a more environmentally sustainable and green economy is hampered in conflict-affected and displacement settings. Yet, it can also trigger a clean energy transition. For example, according to the Organisation for Economic Co-operation and Development (OECD), Russia's invasion of Ukraine since 2022 resulted in the reversal of progress achieved in the adoption and transition to clean energy in Ukraine [30], however it also promoted a clean energy transition in the EU and renewed commitments to avoid Europe's overdependency on Russia's fossil fuels [31]. Peace, democracy, and stability are concomitant with progressive policies and action towards clean energy in modern times [30]. Hence, the post-conflict period should be used for green reconstruction as an aspirational objective and economic necessity.

Though some refugee-hosting countries are progressing towards inclusive clean energy policies, others are far from achieving the desired level of progress. In some displacement contexts, the lack of progressive and inclusive policies directly impact people's access to energy, in some cases even constituting the reason why many displaced persons remain without access to energy. In some displacement settings, for instance, displaced persons have no access to land ownership and cannot build permanent houses fit for national grid connection. Thus, limiting their ability to get connected to national grid with requirements to land ownership as it is in Rwanda for example. Similarly, in Uganda, the lack of permanent housing fit for grid connection is the reason why some households have no access to energy in a few refugee camps where the national grid is accessible. Successful inclusion of displaced populations within national policies and initiatives will likely improve sustainable energy access outcomes and durability [32].

However, it is essential to note that the majority of displaced persons find shelter in countries already grappling with energy security issues where delivering energy solutions to conflict-affected populations is often intricate and costly [33], resulting in a conflict of interest as host governments struggle to prioritise between supporting their citizens and displaced people. National policies that enable integration and self-reliance among displaced persons, including helping them to participate in host economies, will allow more households to pay for their energy needs [32]. Nevertheless, there is a need to continually support the Extremely Vulnerable Individuals (EVIs) in displacement settings with energy support, subsidies, and aid, as they are incapable of paying for energy services both in the short and long run.

Despite challenges, progressive policy work is underway in some countries. For example, Uganda has launched a four-year (2022-2025) Sustainable Energy Response Plan (SERP) for refugees and the host communities [34]. Through the SERP, the government aims to support the refugee and host communities "to attain universal access to affordable, reliable, and clean energy for socio-economic transformation in an environmentally sustainable manner". Also, long-term energy policy planning enabled the delivery of basic needs such as education, healthcare, businesses, and lighting for security in Za'atari Refugee Camp in Jordan [35], thereby supporting sustainable livelihoods. This policy was beneficial but has not yet been replicated elsewhere. However, it should be noted that Jordan's energy infrastructure and policy environment are more advanced than most other displaced persons' hosting countries. Additionally, integrating clean energy access within the Regional Refugee and Resilience Plan (3RP) addressing the Syrian Crisis in Jordan has also yielded significant benefits in improving energy access for displaced persons [36]. This initiative has played a vital role in delivering essential social, economic, protection, and livelihood services for displaced Syrian communities.

Improving clean energy access must go hand in hand with environmental sustainability in displacement settings. This includes promoting ecosystem restoration and the responsible management of forests for improved access to energy resources and bolstering the resilience of livelihoods in these settings [37]. Thus, it is essential to invest in correcting the damage already caused as we strive not to cause more damage. In line with this, it is important to note the reforestation work involving Rohingya refugees in Bangladesh to reduce disaster risks after the influx of over 1 million refugees led to massive deforestation [38].

Consequently, while certain countries such as Jordan and Uganda have assumed the responsibility of crafting progressive policies for a transition to clean energy within displacement contexts, it is noteworthy that numerous other low- and middle-income countries hosting displaced persons lack comprehensive strategies for energy transition in these settings. Even in cases where such policies are in place, such as in Uganda, a fundamental concern arises concerning the feasibility of effective implementation of these plans, particularly regarding resource availability and capacity. Progressive policy initiatives should be replicated and complemented with strategic funding and implementation plans to enable the realisation of sustainable and inclusive energy transition in host countries. Also, the international community should rally behind countries enacting progressive policies like Uganda to realise them and encourage others to follow suit.



05

# New Capacity

Building New Capacity for and with Displaced Communities

As humanitarian energy access takes a new shape and many initiatives are being redirected towards this agenda, it is crucial to shed light on the role that capacity building plays in driving the energy transition and advancing SDG 7 within displacement settings worldwide. Capacity building empowers individuals and organisations, enabling them to navigate the evolving landscape of humanitarian energy effectively. Through upskilling and expanding the capacity of the displaced to work on energy access in their communities, we not only enhance the quality of life for displaced persons but also take significant steps toward a sustainable and energy-secure future. This section explores the initiatives and strategies driving this transformation while bringing us closer to achieving SDG 7 in displacement settings globally.

Clean energy is being used to improve learning and education. For instance, in the Democratic Republic of the Congo, Egypt, Kenya, Mozambique, South Sudan, and Tanzania, the Vodafone Foundation and UNHCR are investing in solar infrastructure tailored to each school's current and future energy needs through the Instant Network Schools (INS) programme, which aims to offer refugees and host communities improved access to high-quality digital education [39]. So far, around 300 schools and approximately 1,500,000 indirect beneficiaries such as young students, and adult community members have benefited from the programme.

The Shire Alliance, a partnership between UNHCR, Acciona.org, Iberdrola, Signify, the Spanish Agency for Cooperation, and the Centre for Innovation in Technology for Human Development of the Polytechnic University of Madrid, collaborates with partners and implementers within refugee camps to advance energy solutions that enhance services and uplift the quality of life for displaced persons [40]. The Shire Alliance runs a clean energy programme in Ethiopia to support 800 refugee students and 4,000 local residents [40]. This newfound access to power has an immediate positive effect on the quality of life and education provided to refugee children in Ethiopia. It allows for well-lit classrooms, enabling students to read, write, and engage in learning activities regardless of the time of day, thus maximising the use of educational resources [41].

Research from Chatham House in Jordan highlights that investing in energy-efficient measures in schools and hospitals can deliver humanitarian and public service benefits [42], thus improving the quality of life for displaced persons. Meanwhile the Solar Age Project, initiated in 2018, empowers Syrian women refugees in Turkey through solar engineering, training women under the Energy for Everyone initiative, and this has improved the livelihoods of the project beneficiaries [43]. This helps facilitate education and communication, enabling access to local jobs for refugees' women.

In Mali, the organisation MOON, Power to Communities and UNHCR have piloted a solar home kit project to provide energy and digital inclusion to 400 refugee and displaced families in host areas. They have trained around 40 community members in their installation and usage [44]. This combination of solar and digital energy has played a vital role in providing the necessary foundations for forcibly displaced communities to be meaningfully integrated into the digital world.

In 2022, the GPA and SELCO Foundation formed a partnership to promote enhanced energy access for better improved healthcare, clean water, education services, and overall economic development in the global south [45]. This is done through training practitioners on developing sustainable Energy Delivery Models and through a mini-webinar and workshop series sharing knowledge on the energy-livelihoods nexus in humanitarian contexts.

As we strive for capacity building, one area that needs particular attention is building the capacity of displaced persons to utilise and realise the benefits of access to clean and affordable energy to improve their livelihoods. Hence, helping displaced communities clear the myths, traditional beliefs, and misconceptions about clean energy technologies is a deserving effort. Therefore, Behavioural Change Communication (BCC) for energy access is essential in addressing the low adoption of clean energy solutions due to a lack of awareness of the benefits of renewable energy among the target population [46]. To boost productive energy use (PUE) in displacement settings, it is essential to utilise diverse communication channels and local languages to reach a broader audience, given the multicultural context of such settings [47]. Additionally, it's crucial to provide end-user training, ensure people use their appliances safely, and ensure the operation and maintenance (O&M) of clean energy products.

Capacity building is vital for advancing the energy transition and SDG 7 in displacement settings. Capacity building empowers individuals and organisations, enhancing lives and fostering a sustainable energy future. Initiatives powered by clean energy enable education, drive positive change, efficiency, and integration, promising a brighter, and more secure future for all.



# Impact Story

## *Mandulis Energy Transforms Lives with Clean Energy Innovation*

Mandulis Energy technology enables families in Uganda's refugee-hosting districts, including Adjumani, Kiryandongo, and Lamwo, to access clean energy. The company converts agricultural waste into clean cooking briquettes, offering an eco-friendly alternative to wood. Its combined efforts have provided 7,941 end users with access to clean cooking, significantly reducing reliance on charcoal and firewood. Mandulis Energy also lights homes through biomass gasification, introducing families to electricity. The company also empowers local farmers with training, enabling them to turn post-harvest waste into income and create organic fertilisers through gasifier cookstoves. Over 3,000 beneficiaries are reaping the rewards, generating extra income, launching new businesses, and expanding existing ones from available electricity from Mandulis Energy's biomass/biogas solar PV hybrid mini-grid [48].



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06

# Progress on Inclusion

*Progressive Policies and Approaches Emerge*



Recent progress and advocacy efforts focused on prioritising the inclusion of displaced persons are beginning to yield positive outcomes. There is a growing acknowledgement that the incorporation and leadership of displaced populations in the planning and implementation of energy policies and projects facilitate well-informed decision-making for policymakers, foster project ownership, and allow the actual experiences of those affected to influence the development of clean energy solutions that are contextually and culturally relevant. These developments are essential for enabling long-term strategic planning and progress, which are fundamental in achieving SDG 7 and reducing greenhouse gas emissions. Regrettably, the current landscape reveals that energy policy planning and implementation are still predominantly influenced by individuals who lack a comprehensive understanding of the challenges faced by displaced populations. However, it is essential to highlight the modest headway being made in this regard. Presented below is a summary of the progress achieved in incorporating displaced persons into energy planning within displacement contexts.

Addressing the systemic absence of communities affected by displacement in global summits and conferences, decision-making spaces, and humanitarian efforts pertaining to their lives has become a vital priority of the GPA and its humanitarian energy partners. In 2022, during the run-up to COP 27, the GPA committed, along with various partners, to ensure the presence and involvement of a ‘refugee delegation’ at the COP 27. With over 70% of displaced persons originating from climate-vulnerable nations, the continued exclusion of refugees and other forcibly displaced persons (FDPs) from global climate discussions was not an option [49]. Though still tokenistic because of limited representation, lack of genuine influence, and power imbalance making their contribution less influential to policy formulation and implementation and more of a formality, the establishment of the displaced delegation aimed to set a new precedent for the sector. Along with the insights shared by those attending the conference on the role of energy in humanitarian settings, there were those views expressed during a series of interviews held between GPA partners and FDPs worldwide. Those who partook in the conference and those interviewed called for sustainable energy interventions to be established as a humanitarian and development priority. They spoke about the role energy plays directly in fostering socio-economic and community development, enabling individual self-determination, community self-governance and self-reliance, protecting local ecosystems and climate resilience, and enhancing access to knowledge and training.

With this, humanitarian energy actors have been working to involve displaced persons more meaningfully in planning, developing, implementing, and reporting on energy access interventions, strategies, and governance. The [Global Refugee-led Network’s](#) call for ‘Nothing about us without us’ (no decisions regarding displaced persons to be taken without their involvement) is being adopted more literally among the humanitarian energy community. For example, the GPA Coordination Unit’s [READS Programme](#), aimed at identifying viable implementation opportunities to increase sustainable energy in displacement settings, works directly with researchers with lived experience of displacement. This allows for connecting with their networks and leveraging their expertise and continues to prove key in understanding what kind of interventions could be most viable and effective for a specific context.

Within the initiatives aimed at advancing clean energy adoption, the Global Distributors Collective (GDC) is actively working to access previously untapped markets through increasing consumer demand for high-impact solutions, improved affordability due to technological advancements and the creation of Pay-As-You-Go (PAYGO) models [50]. Last Mile Energy Distribution models refer to innovative energy delivery solutions to reach the most remote and underserved areas, which often include displacement settings such as refugee camps and settlements. The expansion of Last Mile Energy Distribution models in displacement settings would represent a step forward in enhancing energy access, improving efficiency, and effectively reducing CO2 emissions, all of which are integral components of the broader mission to attain SDG 7. However, as energy access in displacement settings improves, it is essential to understand that unequal access to energy resources may sometimes lead to discontentment and tensions among displaced community members and between displaced populations and their host communities [51]. Thus, it is paramount for renewable energy initiatives to proactively address and mitigate potential conflicts while engaging both refugee and host communities.

Among the new and exemplary projects dedicated to the leadership and inclusion of displaced persons in energy policy planning and implementation are the UK Aid funded [Transforming Humanitarian Energy Access \(THEA\) programme](#) and the [Last Mile Climate Project](#) of the GPA. THEA was initiated in September 2022 in collaboration with the Global Refugee-Led Network (GRN), Ashden, and Chatham House, with a mission to generate evidence for inclusive energy investments in displacement settings and decarbonise UN operations globally [52]. The leadership of this project, comprised of displaced individuals, sets it apart. More than 30% of the THEA programme staff have backgrounds rooted in displacement experiences. This distinctive approach is further highlighted by its pioneering partnership with the Global Refugee-led Network (GRN), turning the notion of inclusion from mere discourse in meetings and conferences into a tangible reality. [The Last Mile Climate Project](#), under the leadership of Last Mile Climate, UNEP Copenhagen Climate Centre, and the GPA, operating within the Global e-Cooking Coalition (GeCCo), is not only dedicated to expanding clean and sustainable cooking solutions for displaced persons and host communities in Africa but prioritises the employment of displaced persons as an integral part of the core team responsible for managing the project's implementation.

Though the meaningful participation of FDPs in sustainable energy activities and programmes is gaining more traction, the involvement of individuals with lived experience of displacement remains tokenistic at best. The determination and enthusiasm expressed during global forums and conferences to date regarding the direct involvement of displaced persons in decision-making processes, humanitarian research, planning, and response has yet to be formally committed to or upheld. While it is a positive development that displaced people's voices are being acknowledged and heard more widely, the participation of FDPs cannot be limited to advocacy. The examples above provide a glimpse into what meaningful participation in action can look like. Going forward, it is imperative to not only advocate for the involvement of FDPs within humanitarian energy planning and implementation but to ensure the involvement and leadership of people with lived experience of displacement in all facets of humanitarian intervention.



# Impact Story

## *Hope created by Ashden Awards*

The climate solutions charity Ashden supports innovative refugee-led businesses with grants, publicity, and connections to funders and decision-makers. Since 2020, it has run an annual Ashden Award for Powering Refugees and Displaced People, which boosts pioneers delivering change in their communities

Winners of the award include Kenya's USAFI Green Energy, which manufactures clean cookstoves at Kakuma Refugee Camp, became the latest winner in 2023. Another award in 2020 went to the United Nations Development Programme for helping women entrepreneurs in conflict-hit Yemen set up solar mini-grids serving local homes and businesses. Ashden's support helped grow the number of microgrids from three to 15.

The first two winners were: Kakuma Ventures, who bring solar-powered Wi-Fi to refugee camp residents in Kakuma, Kenya. Ashden's backing helped the organisation build new infrastructure and raise the number of people it reaches to 5,800. In the same country, Solar Freeze previously won the award with its solar-powered refrigerators that cool food and medicines. Ashden's support included helping the organisation train 30 solar technicians.

All these winners are bringing new jobs and essential services to refugees. Ashden's support helps trailblazers expand their operations and raises awareness of refugee energy poverty. In the past year, Ashden has told stories of refugee energy innovation in international media and helped refugees speak up on stage at the COP27 climate talks.





# Progress on Climate Action

*Humanitarian Energy is Lagging Behind in the SDG 7 Clean Energy Transition*

Efforts towards clean energy transitions and climate action in displacement settings are gradually taking shape, though at a pace insufficient to meet the objectives of SDG 7 and achieve net-zero emissions by 2050. The energy access trends in displacement settings highlight a visible and widening disparity that carries significant implications for health, economic, and quality of life outcomes for displaced persons and their host communities. Energy is a cornerstone for various aspects of livelihoods, including business operations, cooking, lighting, hospitality, entertainment, and other activities enabled by PUE. The evidence presented here highlights the progress and substantial gaps that remain in attaining SDG 7 in displacement settings.

Energy transition in displacement settings needs bold steps and heavy investments in clean energy options in order to yield substantial benefits. Such a shift could be facilitated by borrowing from the example of the 5 MW grid-connected solar plant implemented to provide electricity for over 40,000 residents of the Azraq refugee camp in Jordan [53]. Such an initiative stands as a prime example of the economic, social, and environmental benefits of investing in clean energy. This plant alone yields an annual savings of up to USD 2.75 million in electricity expenses and avoids 6,300 tons of CO<sub>2</sub> emissions annually. This initiative operates on a grant-dependent model, relying on donors for funding, rendering it potentially unsustainable in the event of prolonged or insufficient financial support. In addition, this kind of project requires specific energy infrastructure and enabling policies that are not common in other forcibly displaced persons' hosting countries. Still, it remains a promising example of a large-scale clean energy project in displacement settings. It also highlights the importance of community sensitisation and proper operation and maintenance plans, which are key elements to the sustainability and long-term operations of these projects.

The 2022 Annual Report on Sustainable Energy by UNHCR indicates that solar solutions were implemented in 44% of health facilities across 51 countries [54]. Additionally, 15% of refugees gained access to clean cooking solutions. Feasibility assessments for borehole solarisation were conducted in six countries, long-term renewable energy agreements were established, and 38,404 households received cash assistance for energy needs, showcasing UNHCR's dedication to improving energy access for displaced populations [54]. Though this represents a good start, a lot more is still required to reach the many displaced persons still lacking access to energy.

Ultimately, the progress in clean energy and climate action within displacement settings is gradually taking shape. Still, an enormous amount of work remains to meet the objectives of SDG 7 and achieve net-zero emissions by 2050. The inability of energy access rates for displaced persons and host communities to increase apace with displacement is a concerning issue, given the crucial role that energy plays. Clean cooking, essential for halving emissions by 2030, requires substantial funding and the transition to sustainable energy sources. The recent GRF 2023 and COP 28, as well as future COPs, present opportunities to build momentum to rally international support for climate action in displacement settings so that displaced persons are not left behind.

## Global Energy Picture

Despite all efforts, progress toward achieving SDG 7 in displacement is insufficient to meet the 2030 targets and features significant regional variations. According to the International Energy Agency, approximately 75 million people who have recently acquired access to electricity are at risk of losing their ability to afford it. In comparison, an estimated 100 million people may revert to relying on traditional biomass for cooking [55]. Nonetheless, the Russian invasion of Ukraine has spurred Europe's clean energy transition goals, as the energy crisis that affected the EU has brought energy security to the forefront, providing an added impetus to expedite the adoption of renewable energy sources.

Key economic challenges hindering global SDG 7 realisation include uncertain macroeconomic conditions, inflation, currency fluctuations, rising debt distress, limited financing, supply chain issues, fiscal constraints, and escalating commodity prices caused in part by the impacts of the COVID-19 pandemic. This in addition to increasing energy costs, insufficient actions and financial support for universal electricity and clean cooking access in developing economies [56], thus making it unlikely that SDG 7 will be met by 2030.



# Clean Cooking

In recent years, the humanitarian sector has typically turned to liquefied petroleum gas (LPG) as an alternative to biomass for cooking fuel. Since 2018, UNHCR and IOM have provided LPG to all Rohingya refugees in Bangladesh, with approximately 90,000 refugee households receiving gas refills regularly [57]. This was aimed at promoting clean cooking and reducing the impact of climate change. Though LPG produces lower indoor air pollution emissions than firewood and charcoal, it is still not an ideal option. The expense of and ongoing need for LPG to power these cooking solutions is financially draining to humanitarian operations, and the long-term sustainability of these initiatives cannot be guaranteed amidst donation reductions, global security volatility, and the ever-increasing number of people being displaced by conflict and climate change. Consequently, a shift towards renewable energy powered cooking options like solar-powered electric cooking or grid-powered cooking, for example with electric pressure cookers, will help to reduce the long-term costs of cooking solutions, which is essential given the ongoing and growing need.

Clean cooking has been identified as a fundamental undertaking to achieve the goal of halving emissions by 2030, according to the Clean Cooking Alliance [58]. Accordingly, this will demand at least USD\$10 billion annually in innovative financing to provide 2.4 billion individuals with clean cooking worldwide. Currently, over 80% of displaced persons residing in camp settings rely on biomass (firewood and charcoal) for cooking on basic stoves across the globe. Transitioning to sustainable fuelwood sources and securing long-term financing has been identified as an urgent priority if clean cooking is to be achieved.

In sub-Saharan Africa, the World Food Programme (WFP) and UNHCR have launched a joint clean cooking program, reaching 5,000 families and local vendors across six refugee camps in eastern Chad. They employ LPG for clean energy alongside food assistance. WFP is also expanding clean cooking technologies and clean energy solutions, including solar-powered cookers in schools and solar-powered kitchens in El Salvador, with international expansion plans contingent on resource availability [59]. The "Modern Cooking Solutions in Chad and Beyond" project, led by WFP and UNHCR and funded by SIDA, addressed these challenges in six eastern Chad refugee camps. Results indicated that a combination of LPG and e-cooking can be a viable solution with improved training and that it is essential to involve host communities [60].

Research has shown that clean cooking should be incorporated into programmes, financial policies and support, national initiatives and greenhouse gas accounting, technical assistance, and integrated into fuel value chain partnerships to yield both environmental and community benefits [61]. Despite the efforts to promote clean cooking globally, there is still a clear indication that we are far from reaching the population in need in displacement settings. Ambitious goals, innovative financing and strong political and economic will are all required to enable access to clean cooking to majority of world's displaced populations.



08

# Forward Outlook

*Looking to the Future for Humanitarian Energy*



Looking to the future, humanitarian energy is marked by a promising surge in donor commitments and international funding initiatives, signalling a new era of optimism for investment in sustainable energy solutions. Noteworthy contributions from entities such as the German Federal Foreign Office, UK Aid, IKEA Foundation, NORCAP, and initiatives from organisations including Mercy Corps, Practical Action, SNV, and GIZ further strengthen this trajectory. However, as displacement challenges evolve, particularly in urban areas and crisis regions, and with the escalating crises in Sudan and Gaza, there is a pressing need for new approaches and expanded efforts in energy planning, financing, and investments. While progress is evident, the current funding levels remain insufficient to catalyse a global shift toward clean energy for displaced persons and their host communities. As we strive for universal access to clean, affordable, and reliable energy in humanitarian contexts, a redoubling of resources, enhanced commitment, collaboration, and innovative solutions are imperative to ensure that no one is left in the dark with regard to energy access in displacement settings.

New evidence indicates daunting energy access challenges in displacement settings going forward. While strides have been made in highlighting the importance of sustainable solutions, gaps persist in knowledge, investment, and policy. The diverse range of initiatives and studies, including the READS Programme and the exploration of solar mini-grids, demonstrates a growing acknowledgment of the urgency to address energy disparities for displaced people and host communities. However, the sobering reality revealed by recent data on the low and potentially deteriorating rates of electricity and clean cooking access, coupled with the disproportionate focus on specific energy solutions like solar lanterns and improved cookstoves, highlights the need for more comprehensive and inclusive research. Bridging these gaps requires sustained investments in research, innovative solutions, and a commitment to generating reliable evidence. As the sector navigates complexities, such as the integration of circular economy principles and the link between climate change and migration, it becomes evident that a renewed dedication to clean energy research is essential. The journey toward universal access to clean, affordable, and reliable energy in humanitarian contexts demands a collective effort to fill knowledge gaps and shape evidence-based strategies to drive substantive change.

Both progress and challenges mark the humanitarian energy policy landscape. Amidst this, it is crucial to acknowledge the important role of progressive and inclusive policies in the sustainable energy transition for displaced persons. The energy global advocacy work done by the GPA and partners, including Chatham House, UNHCR, IOM, WFP, Practical Action, GIZ, GRN, Ashden, SNV, and Mercy Corps, is commendable. The GPA and partners' efforts and commitment to incorporating humanitarian energy needs into international discussions demonstrate a growing awareness of the urgency for comprehensive planning. However, the challenges posed during crises, as seen in conflict-affected and displacement settings, require innovative solutions and a commitment to green reconstruction and investment as an economic move and environmental necessity. The uneven progress across refugee-hosting countries highlights the need for inclusive policies that integrate displaced persons into national energy planning to foster self-reliance and include progress on climate action in displacement settings in Nationally Determined Contributions (NDCs).

Uganda's Sustainable Energy Response Plan (SERP) is a promising step towards inclusive energy policy planning. However, there must be sufficient resources devoted to its implementation to enable its realisation. In addition, Jordan's integration of clean energy access within the regional refugee and resilience plan addressing the Syrian Crisis (3RP) has significantly improved energy access for displaced persons. Nevertheless, other countries hosting displaced persons lack comprehensive energy policies and plans, reflected in most displaced persons' lack of access to adequate energy. Thus, as we seek progress, there is a glaring need for funding to implement good existing policies like the SERP and ensure the development of progressive policies where they do not exist. As we move forward, the success stories must be replicated, and collaborative efforts should be directed toward overcoming the difficulties in achieving sustainable and inclusive energy transitions in humanitarian settings.

As humanitarian energy develops and grows, there is a need to build new human and technical capacities and recognise the role of energy in enhancing training and education in the displacement space. This calls for the recognition of the vital role of knowledge and infrastructure. Various initiatives highlight the positive impact of capacity building, empowering individuals, and organisations. For example, projects like Instant Network Schools and the Solar Age Project are leveraging clean energy to enhance education and empower women in refugee communities. Energy-focused humanitarian partners are demonstrating a commitment to expanding energy access for better healthcare, education, and economic development. These initiatives promise a brighter and more secure future, emphasising the importance of renewable energy technologies. Capacity building remains crucial for driving positive change, efficiency, and integration in humanitarian energy, paving the way for a sustainable and inclusive energy future.

FDPs' active role in humanitarian energy is increasing, but the involvement of displaced persons is often symbolic. Genuine participation of displaced persons in humanitarian energy decision-making and response lacks formal prioritisation. The participation of FDPs in humanitarian energy work cannot be limited to advocacy. Going forward, ensuring the involvement and leadership of people with lived experience of displacement in all facets of humanitarian intervention is imperative. Examples of prioritising the involvement and leadership of FDPs could include further funding FDPs-led initiatives, as available data suggests that average grant sizes to Refugee-Led Organisations (RLOs) are 10 times smaller than those reported to local/national non-governmental organisations [62], setting a minimum quota of at least 10% for the humanitarian programme and project staffing that individuals must fill with lived experience of displacement as advocated for by the Global Refugee-led Network and the GPA. This requires encouraging the global recognition of FDP-led organisations as distinct and vital actors within the localisation agenda and expanding and prioritising the employment of displaced persons as an integral part of the core team responsible for managing any project's planning and implementation.

The future of humanitarian energy indicates a mixed picture of progress and challenges. While efforts towards clean energy transitions in displacement settings are slowly emerging, they fall short of meeting the ambitious targets of SDG 7. The disparity in energy access poses significant implications for the well-being and economic outcomes of displaced persons and their host communities. Despite regional variations, the overall progress toward achieving SDG 7 by 2030 is insufficient, with financial challenges, emerging conflicts, and the ongoing impacts of the COVID-19 pandemic hindering global realisation. The shift toward cleaner cooking options, such as solar-powered solutions, presents a promising avenue to reduce long-term costs and environmental impact. However, challenges persist, including the financial drain of conventional cooking solutions like LPG and the need for substantial funding to transition to sustainable fuel sources. While initiatives in solar solutions and clean cooking showcase progress, the enormity of the task ahead requires concerted efforts, innovative financing, and a focus on nature-based solutions to achieve both environmental and community benefits.

# References

- [1] WFP and MECS, 'Clean and Modern Energy for Cooking - A Path to Food Security and Sustainable Development', 2022. Accessed: Aug. 24, 2023. Available at: <https://www.wfp.org/publications/clean-and-modern-energy-cooking-path-food-security-and-sustainable-development>
- [2] World Bank and WHO, 'Energizing health: Accelerating electricity access in health-care facilities', 2023. Accessed: Aug. 08, 2023. Available at: <https://reliefweb.int/report/world/energizing-health-accelerating-electricity-access-health-care-facilities>
- [3] ECHO, 'EU opens new rescEU energy hub in Poland', 2023. Accessed: Aug. 08, 2023. Available at: [https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/news/eu-opens-new-resceu-energy-hub-poland-2023-01-26\\_en](https://civil-protection-humanitarian-aid.ec.europa.eu/news-stories/news/eu-opens-new-resceu-energy-hub-poland-2023-01-26_en)
- [4] Sugar, Mizzy, 'Prague will stop housing Ukrainian refugees, wants to save money due to higher energy costs', 2022. Accessed: Aug. 23, 2023. Available at: <https://europe-cities.com/2022/08/24/prague-will-stop-housing-ukrainian-refugees-wants-to-save-money-due-to-higher-energy-costs/>
- [5] UNICEF, 'By ensuring uninterrupted access to energy, we safeguard every child's right to safety', 2023. Accessed: Aug. 04, 2023. Available at: <https://www.unicef.org/moldova/en/stories/ensuring-uninterrupted-access-energy-we-safeguard-every-childs-right-safety>
- [6] Practical Action, 'Practical Action launches new phase of Renewable Energy for Refugees project', 2022. Accessed: Aug. 08, 2023. Available at: <https://practicalaction.org/news-media/2022/11/29/practical-action-launches-new-phase-of-renewable-energy-for-refugees-project/>
- [7] Energy 4 Impact, 'Creating livelihood opportunities for refugees through energy access - recommendations for organisations working with entrepreneurs in displacement settings', 2022. Accessed: Aug. 24, 2023. Available at: <https://sun-connect.org/creating-livelihood-opportunities-for-refugees-through-energy-access-recommendations-for-organisations-working-with-entrepreneurs-in-displacement-settings/>
- [8] Innovations Norway, 'Innovation Norway visits projects in Uganda', 2023. Accessed: Aug. 08, 2023. Available at: <https://hip.innovationnorway.com/article/innovation-norway-visits-projects-in-uganda>
- [9] ICRC, 'ICRC launches new fund to boost climate action in its humanitarian programmes', 2022. Accessed: Aug. 04, 2023. Available at: <https://www.icrc.org/en/document/icrc-launches-fund-to-boost-climate-action>
- [10] EU, 'Climate change and Environment - Factsheet', 2023. Accessed: Aug. 23, 2023. Available at: [https://civil-protection-humanitarian-aid.ec.europa.eu/what/humanitarian-aid/climate-change-and-environment\\_en](https://civil-protection-humanitarian-aid.ec.europa.eu/what/humanitarian-aid/climate-change-and-environment_en)
- [11] Mercy Corps, 'Mercy Corps joins forces with Energy Peace Partners to Promote Renewable Energy in Refugee Communities', 2022. Accessed: Aug. 24, 2023. Available at: <https://www.mercycorps.org/press-room/releases/Mercy-Corps-joins-forces-with-EPP-to-promote-renewable-energy-in-refugee-communities>
- [12] G. Lahn, O. Grafham, and F. K. Annan, 'Heat, Light and Power for Refugees', 2015. Available at: <https://www.chathamhouse.org/sites/default/files/publications/research/2015-11-17-heat-light-power-refugees-lahn-grafham-final.pdf>
- [13] Grafham, Owen, 'Energy for the most vulnerable remains a distant hope', 2022. Accessed: Aug. 24, 2023. Available at: <https://www.chathamhouse.org/2022/05/energy-most-vulnerable-remains-distant-hope>
- [14] Ariel, Cohen, 'Energy Policies For Refugee Assistance: Sustainability And Access', 2022. Accessed: Aug. 23, 2023. Available at: <https://www.forbes.com/sites/arielcohen/2022/08/14/energy-policies-for-refugee-assistance-sustainability-and-access/?sh=190192f776a8>
- [15] Cross, Jamie, Gül Demir, Elif, Grafham, Owen, and Schröder, Patrick, 'How can we create circular opportunities for energy access?', 2022. Accessed: Aug. 24, 2023. Available at: <https://circulareconomy.earth/publications/how-can-we-create-circular-opportunities-for-energy-access>
- [16] M. M. Hasan, A. Al Baker, and I. Khan, 'Is solar power an emergency solution to electricity access? Findings from the largest Rohingya refugee camps', Energy Research & Social Science. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S2214629623001317?via%3Dihub>
- [17] IFC, 'Energy Sector Baseline Study in the Kakuma-Kalobeyei Refugee-Hosting Area in Kenya', 2022. Accessed: Aug. 24, 2023. Available at: <https://www.ifc.org/en/insights-reports/2022/energy-sector-baseline-study-in-the-kakuma-kalobeyei-refugee-hosting-area-in-kenya>

- [18] Rosenberg-Jansen Sarah, 'The emerging world of humanitarian energy: A conceptual research review', 2022, Accessed: Aug. 08, 2023. Available at: <https://www.sciencedirect.com/science/article/pii/S2214629622002821>
- [19] Baldi, Duccio, Moner-Girona, Magda, Fumagalli, Elena, and Fahl, Fernando, 'Planning sustainable electricity solutions for refugee settlements in sub-Saharan Africa', 2022, Accessed: Aug. 24, 2023. Available at: <https://www.nature.com/articles/s41560-022-01006-9>
- [20] Rosenberg-Jansen Sarah, 'The Secret Life of Energy in Refugee Camps: Invisible Objects, Technologies, and Energy Systems in Humanitarianism', 2022, Accessed: Aug. 08, 2023. Available at: <https://academic.oup.com/jrs/article/35/3/1270/6588151?login=false>
- [21] McAuliffe, M and A. Triandafyllidou (eds.), 'World Migration Report 2022. International Organization for Migration (IOM)', Geneva, 2022. Accessed: Aug. 08, 2023. Available at: <https://publications.iom.int/books/world-migration-report-2022>
- [22] H. Beath, J. Baranda Alonso, R. Mori, A. Gambhir, J. Nelson, and P. Sandwell, 'Maximising the benefits of renewable energy infrastructure in displacement settings: Optimising the operation of a solar-hybrid mini-grid for institutional and business users in Mahama Refugee Camp, Rwanda', *Renewable and Sustainable Energy Reviews*, 2023. Available at: <https://www.sciencedirect.com/science/article/pii/S1364032122010231>
- [23] UNHCR, 'Mapping of Development-led Energy Programmes', 2022. Available at: <https://www.unhcr.org/media/mapping-development-led-energy-programmes-25-countries>
- [24] Sandwell Philip, Täuber Megan, and Deng Chuol Nyayow, 'Roadmap for Energy Access in Displacement Settings: Kenya', UNITAR, Geneva, Switzerland, 2023. Accessed: Nov. 09, 2023. Available at: [https://www.humanitarianenergy.org/assets/resources/READS\\_Kenya\\_.pdf](https://www.humanitarianenergy.org/assets/resources/READS_Kenya_.pdf)
- [25] Täuber Megan, Sandwell Philip, and Ndahimana Epa, 'A Roadmap for Energy Access in Displacement Settings: Uganda', UNITAR, 2023. Accessed: Nov. 09, 2023. Available at: [https://www.humanitarianenergy.org/assets/resources/Compress\\_Uganda\\_READS\\_report.pdf](https://www.humanitarianenergy.org/assets/resources/Compress_Uganda_READS_report.pdf)
- [26] Täuber Megan, Sandwell Philip, and Nshizirungu Steven, 'A Roadmap for Energy Access in Displacement Settings: Rwanda', UNITAR, Geneva, Switzerland, 2023. Accessed: Dec. 23, 2023. Available at: <https://www.humanitarianenergy.org/thematic-working-areas/reads-programme/>
- [27] UNHCR, 'Refugee Data Finder', 2023. Accessed: Nov. 22, 2022. Available at: <https://www.unhcr.org/refugee-statistics/>
- [28] GPA, 'Humanitarian Energy at #COP27', 2022. Accessed: Aug. 23, 2023. Available at: <https://www.humanitarianenergy.org/news/latest/humanitarian-energy-at-cop27>
- [29] United Nations Environment Programme and International Organization for Migration, 'Integrating Displaced Populations into National Climate Change Policy and Planning - Policy Brief', 2023. Accessed: Nov. 22, 2022. Available at: <https://wedocs.unep.org/handle/20.500.11822/43203>
- [30] OECD, 'Environmental impacts of the war in Ukraine and prospects for a green reconstruction'. Accessed: Aug. 23, 2023. Available at: <https://www.oecd.org/ukraine-hub/policy-responses/environmental-impacts-of-the-war-in-ukraine-and-prospects-for-a-green-reconstruction-9e86d691/>
- [31] International Energy Agency, 'Russia's War on Ukraine: Analysing the impacts of Russia's invasion of Ukraine on global energy markets and international energy security'. Accessed: Nov. 22, 2023. Available at: <https://www.iea.org/topics/russias-war-on-ukraine>
- [32] Owen, Grafham, Glada, Lahn, and James, Haselip, 'Scaling sustainable energy services for displaced people and their hosts', 2022. Accessed: Aug. 23, 2023. Available at: <https://www.chathamhouse.org/2022/10/scaling-sustainable-energy-services-displaced-people-and-their-hosts>
- [33] UNDP, 'Sustainable Energy Access for Crisis Recovery: Renewable Energy Solutions for Crisis-Affected Communities in the Arab Region', 2022. Accessed: Aug. 23, 2023. Available at: <https://www.undp.org/publications/dfs-sustainable-energy-access-crisis-recovery-renewable-energy-solutions-crisis-affected-communities-arab-region>
- [34] GOU MEMD, 'Uganda launches Sustainable Energy Response Plan (SERP)', 2022. Accessed: Aug. 23, 2023. Available at: [https://www.mediacentre.go.ug/sites/default/files/media/-Press%20Release\\_PM%20Nabbanja%20launches%20energy%20programme%20for%20refugees.pdf](https://www.mediacentre.go.ug/sites/default/files/media/-Press%20Release_PM%20Nabbanja%20launches%20energy%20programme%20for%20refugees.pdf)

- [35] UN, 'My children ask me, what is Syria?' Za'atari refugee camp enters second decade', 2022. Accessed: Aug. 23, 2023. Available at: <https://news.un.org/en/story/2022/09/1126351>
- [36] 3RP Joint-Secretariat, 'Mainstreaming environmental sustainability and clean energy access in the regional refugee and resilience plan in response to the Syria crisis (3RP)', 2022. Accessed: Aug. 08, 2023. Available at: [https://www.3rpsyriacrisis.org/portfolio/environmental\\_sustainability/](https://www.3rpsyriacrisis.org/portfolio/environmental_sustainability/)
- [37] FAO, 'Project brief: Greening the humanitarian response in displacement settings', FAO, 2023. Available at: <https://www.fao.org/family-farming/detail/en/c/1638838/>
- [38] UN Office for Disaster Risk Reduction, 'Involving Rohingya refugees in reforestation in Bangladesh to reduce disaster risks', 2022. Accessed: Nov. 22, 2023. Available at: <https://reliefweb.int/report/bangladesh/involving-rohingya-refugees-reforestation-bangladesh-reduce-disaster-risks>
- [39] Justin, 'When innovative educational technologies combined with solar infrastructure benefit the integration of refugees and the communities that host them', 2022. Accessed: Aug. 23, 2023. Available at: <https://www.victronenergy.com/blog/2022/08/17/when-innovative-educational-technologies-combined-with-solar-infrastructure-benefit-the-integration-of-refugees-and-the-communities-that-host-them/>
- [40] Alianza Shire, 'Two primary schools in Kobe refugee camp now have access to renewable energy', 2023. Accessed: Aug. 04, 2023. Available at: <https://alianzashire.org/en/energy-system-for-two-primary-schools/>
- [41] Alianza Shire, 'Solar mini-grids improves learning conditions in schools for refugee children in Ethiopia's Somali region', 2023. Accessed: Aug. 04, 2023. Available at: <https://alianzashire.org/en/solar-mini-grids-improve-refugee-schools-in-ethiopia/>
- [42] G. Lahn, L. Gharaibeh, N. Al Najjar, M. Al-Naber, R. Alhaddadin, and S. Jreisat, 'Scaling up sustainable energy in Jordan's public buildings', Royal Institute of International Affairs, 2023. Available at: <https://policycommons.net/artifacts/3531854/scaling-up-sustainable-energy-in-jordans-public-buildings/4332987/>
- [43] Inisiyatifi, Imece, 'Solar Age: empowering refugee women through solar engineering', 2021. Accessed: Aug. 23, 2023. Available at: [https://womengenderclimate.org/gjc\\_solutions/solar-age-project-empowering-refugee-women-through-solar-engineering/](https://womengenderclimate.org/gjc_solutions/solar-age-project-empowering-refugee-women-through-solar-engineering/)
- [44] MOON, 'Scaling energy and digital access for refugees in Mali', 2023. Accessed: Aug. 08, 2023. Available at: <https://moon.community/scaling-energy-and-digital-access-for-refugees-in-mali/>
- [45] GPA, 'Partnership Announcement on Enhancing Energy Capacities in Humanitarian and Disaster Contexts', 2022. Accessed: Aug. 24, 2023. Available at: <https://www.humanitarianenergy.org/news/latest/partnership-aimed-at-enhancing-capacity-and-increasing-sustainable-energy-access-through-an-ecosystems-approach-in-humanitarian-settings>
- [46] SNV, 'Behavioural change campaign to promote improved cooking launched at Kakuma refugee camp', 2021. Accessed: Aug. 24, 2023. Available at: <https://www.snv.org/update/behavioural-change-campaign-promote-improved-cooking-launched-kakuma-refugee-camp>
- [47] GIZ, 'Promoting Productive Use of Electricity in Displacement settings', 2022. Accessed: Aug. 04, 2023. Available at: [https://energypedia.info/wiki/Promoting\\_Productive\\_Use\\_of\\_Electricity\\_in\\_Displacement\\_settings](https://energypedia.info/wiki/Promoting_Productive_Use_of_Electricity_in_Displacement_settings)
- [48] Creating Hope in Conflict, 'Mandulis Energy is Transforming Communities and Protecting Environments', 2023. Accessed: Aug. 04, 2023. Available at: <https://humanitariangrandchallenge.org/mandulis-energy-is-transforming-communities-and-protecting-environments/>
- [49] Tshilombo, Innocent, 'Refugees too deserve a voice in renewable energy narrative', The Standard, 2022. Accessed: Aug. 08, 2023. Available at: <https://www.standardmedia.co.ke/opinion/article/2001463053/refugees-too-deserve-a-voice-in-renewable-energy-narrative>
- [50] Global Distributors Collective, 'Lessons learned Selling productive use of energy products to last mile consumers', 2022. Accessed: Aug. 23, 2023. Available at: [https://energypedia.info/wiki/Publication\\_-\\_Lessons\\_learned\\_Selling\\_productive\\_use\\_of\\_energy\\_products\\_to\\_last\\_mile\\_consumers](https://energypedia.info/wiki/Publication_-_Lessons_learned_Selling_productive_use_of_energy_products_to_last_mile_consumers)
- [51] R. Nyakerario and N. Mirumachi, 'Conflict sensitivity and renewable energy: a case study from Kenya's Kakuma Refugee Camp. Stockholm Environment Institute, 2022. Available at: <https://sun-connect.org/wpcontent/uploads/conflict-sensitivity-and-renewable-energy.pdf>

- [52] GPA, 'Collaborative Action and Inclusive Responses to Sustainable Energy Provision in Displacement Settings', 2022. Accessed: Aug. 23, 2023. Available at: <https://www.humanitarianenergy.org/news/latest/collaborative-action-and-inclusive-responses-to-sustainable-energy-provision-in-displacement-settings>
- [53] UN, 'Eight years since its establishment, Azraq camp is a home for 40K refugees', 2022. Accessed: Aug. 08, 2023. Available at: <https://jordan.un.org/en/193520-eight-years-its-establishment-azraq-camp-home-40k-refugees>
- [54] UNHCR, 'ANNUAL REPORT 2022 on Sustainable Energy', 2022. Accessed: Aug. 04, 2023. Available at: <https://www.unhcr.org/media/2022-annual-report-sustainable-energy>
- [55] IEA, 'Energy Access: Achieving modern energy for all by 2030 seems unlikely', 2022. Accessed: Oct. 19, 2023. Available at: <https://www.iea.org/topics/energy-access>
- [56] IEA, IRENA, UNSD, World Bank, and WHO, 'Tracking SDG7: The Energy Progress Report 2023', Washington DC, 2023. Accessed: Aug. 08, 2023. Available at: <https://www.irena.org/Publications/2023/Jun/Tracking-SDG7-2023>
- [57] UNHCR, 'FACTSHEET - Energy & Environment January - September 2022'. Accessed: Aug. 08, 2023. Available at: <https://data.unhcr.org/en/documents/details/98144>
- [58] CCA, 'Clean Cooking Named as a Critical "Breakthrough" to Halve Emissions by 2030', 2022. Accessed: Aug. 08, 2023. Available at: <https://cleancooking.org/news/clean-cooking-named-as-a-critical-breakthrough-to-halve-emissions-by-2030/>
- [59] WFP, 'Empowering refugees: From Chad to El Salvador, WFP fires up clean cooking'. Accessed: Aug. 04, 2023. Available at: <https://www.wfp.org/stories/empowering-refugees-chad-el-salvador-wfp-fires-clean-cooking>
- [60] WFP, 'Assessing cooking needs in Chad', 2022. Accessed: Aug. 04, 2023. Available at: <https://www.wfp.org/publications/assessing-cooking-needs-chad>
- [61] CCA, 'Accelerating Clean Cooking as a Nature-based Climate Solution', 2022. Accessed: Aug. 23, 2023. Available at: <https://cleancooking.org/reports-and-tools/accelerating-clean-cooking-as-a-nature-based-climate-solution/>
- [62] C. Sturridge, F. Girling-Morris, A. Spencer, A. Kara, and C. Chicet, 'The failure to fund refugee-led organisations', 2023, Accessed: Nov. 23, 2023. Available at: <https://odi.org/en/publications/the-failure-to-fund-refugee-led-organisations-why-the-current-system-is-not-working-and-the-potential-for-change/>



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