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Voices in the Dark

THE ENERGY LIVES OF REFUGEES

Sarah Rosenberg-Jansen



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For Andy Ward, always.

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Introduction

Energy in Refugee Camps

The Story of Energy in Refugee Camps

Energy runs through every aspect of our lives: it is the golden strand underpinning the use of all our appliances and technologies. Within the room where you are reading this there are lights and electricity, heating or air conditioning. Close by there is almost certainly a computer, power for your television and radio, and sockets that you can use to charge your mobile phone. In the kitchen there is a cooker, stove, kettle or microwave to help prepare food and warm drinks. Underneath it all the national grid murmurs and grunts away to provide power for offices, universities, hospitals, schools and businesses. Energy is not just the sparks of electricity or the burning of cooking fuels, it is the cold beer with friends, the warmth to heat homes; it is the sustenance provided by a cooked meal; it is the electronic click of pressing ‘submit’ on an email or a journal article. Without energy our social rituals and professional outputs start to fall away: life becomes a daily physical struggle to stay warm or cool and to find fuel to cook with. Energy is widely considered essential for modern life in the global north, but the same is not necessarily true for people living in refugee camps.

Refugees are often left without access to electricity or cooking fuels. Worldwide there are now over 102 million forcibly displaced people (UNHCR 2021a), the majority of whom live without access to affordable energy and struggle on a daily basis to access even basic resources (GPA 2022). Many refugee communities remain in extreme conditions of poverty for generations, with families living in camps for over twenty years. Humanitarian agencies, such as the United Nations High Commission for Refugees – UNHCR, are responsible for ensuring refugees have energy. However, in reality humanitarian agencies often do not provide reliable access. As a result the basic energy needs of millions of people are not

being met by the humanitarian system. Rather, many refugees are forced to secure their own energy or live without power or modern cooking access.

The title of this book, *Voices in the Dark*, speaks to two forms of darkness woven through my research: first, the fact that refugees often face limited access to energy; and second, that humanitarian systems and interventions are not informed by the needs of refugees. Evidence presented within the book suggests that humanitarian policy-makers and practitioners have limited experience and knowledge concerning energy, and do not have systems that can support them to deliver energy products and services. Refugee households are not involved in the design of energy programmes, which leaves refugees in the dark (or having to find their own solutions). When refugee homes and businesses do have access to energy, it is often because they have been able to secure and pay for it themselves. Darkness in a refugee-energy context has a political dimension: values and judgements are embedded within humanitarian systems that create and prolong a lack of access to energy and power.

This book presents the voices and opinions of refugees living in Rwanda and Kenya – detailing their challenges and experiences accessing energy, drawing on research conducted over the last decade on humanitarian energy. Many refugees report that the financial and emotional burden of energy weighs heavily on them and that their communities struggle without public lighting or access to power in their schools and community spaces. A sense of anger and frustration loomed large in these descriptions, with refugees becoming exasperated at UN agencies and non-governmental organisations (NGOs) for their failure to provide even basic energy access. The sustainable provision of affordable and reliable energy in refugee camps feels a long way off. As one of the refugee leaders I work with commented:

It feels hopeless. The barriers for refugees are so high. The knowledge about the realities of our lives isn't there. I talk and talk about energy, and why we need proper cooking access and electricity. But it doesn't even register with them – the humanitarians – they just don't know why it matters. When I think about the scale of the challenge, I don't even know where to start. (Refugee living in Kenya)

My own story of working on humanitarian energy started in a similar fashion. While working as a climate adviser within the UK's Department for International Development (DFID – now the Foreign, Commonwealth & Development Office – FCDO), I was invited for a week-long workshop for humanitarian advisers. The topic of one of the first sessions was 'climate and future-proofing humanitarianism', and it was led by one of the most senior humanitarians working for

the department. Towards the end of the session he opened up the floor to the group, asking for suggestions on any issues the group had not yet discussed. Surprised that during a session on climate there had been no mention of sustainable energy, I suggested energy as a topic. ‘Ahhh, our personal energy levels, yes, yes. Rest and recuperation strategies, taking care of our minds and bodies. So important!’ he responded. Somewhat confused, I hesitatingly clarified that I meant light bulbs, power sources, cookstoves, and electrical and thermal types of energy. I was met with blank looks and puzzled faces. The retreat leader continued, ‘right ... there are some generators I suppose, but why would we need to think about that for climate change?’ My jaw dropped and I mentioned that the energy sector globally is responsible for over 70 per cent of all carbon emissions (Ritchie and Roser 2023), and that emissions from fossil fuels are one of the main sources of pollution driving climate change. I suggested that when talking about mitigating and reducing the impacts of climate change, we have to talk about energy. Over the following few days many humanitarians came up to me to ask what I knew about energy in emergency situations, and I confessed that I knew very little: I had actually come to the workshop hoping to learn about the topic from them. On returning from the event I set about googling and trying to find resources on energy in refugee camps or as part of humanitarian response. There was shockingly little available, and at that stage there were no comprehensive numbers or figures on how energy was provided in humanitarian settings.

Versions of this interaction – whereby humanitarians question why people would be interested in the energy used in displacement settings – have sadly continued to be standard in my experiences as both a practitioner and an academic. Sometimes the question of ‘why energy’ comes from a place of genuine interest and curiosity; sometimes in the form of a defensive reply to being asked about the topic or even with anger – why would humanitarians care about generators or cookstoves when they have the important business of protection to get on with!?

Despite these challenges I, together with colleagues at Chatham House and the Moving Energy Initiative, started the first comprehensive study of energy in humanitarian settings – resulting in the publication of the seminal ‘Heat, Light and Power’ report in 2015. In the decade since we started researching humanitarian energy, much has changed. Many UN agencies now have dedicated energy strategies, hundreds of sustainable-energy projects exist in refugee camps and there is initial data on emissions from the humanitarian use of fossil fuels. Indeed, a new ‘humanitarian energy sector’ has emerged, brought together by the efforts of refugees and displaced people, the UN, development agencies, NGOs, the private sector and donors under the umbrella of the Global Platform for Action

on Sustainable Energy in Displacement Settings (GPA), hosted at the UN Institute for Training and Research (UNITAR).

This book draws on my experiences over the past decade working as a humanitarian energy practitioner – designing and developing sustainable-energy investments in refugee camps – as well as my ethnographic and geographic research at the University of Oxford. The book hopes to change perceptions on energy access in refugee camps by documenting the energy lives of refugees and analysing how humanitarian systems are trying to provide energy access. To do this my research demonstrates how energy is used by refugees in their homes, businesses and communities. Using ethnographic evidence to explore how and why energy is important to people living in refugee camps in Kenya and Rwanda, *Voices in the Dark* places refugee voices and displaced energy needs and priorities at its heart, revealing how important electricity and clean cooking access are for displaced households living at the margins of society. Refugee stories evidence the value of electricity and modern cooking in all our lives, highlighting the importance of these resources for refugee quality of life. The book offers a critical resource for researchers working on forced migration, geography and energy studies, demonstrating the realities of refugee lives lived in the dark.

Life in Refugee Camps and the Surprising World of Humanitarian Energy

Life in a refugee camp is undeniably difficult. Many camps struggle with poor shelters, healthcare and limited opportunities for jobs. Most camps are intended to be temporary and so the long-term supply of education, livelihoods or opportunities is often not considered. In many camps in Kenya, Rwanda, Uganda and more generally in sub-Saharan Africa, most people live in small shelters, huts, tents or informal accommodation. Water has to be pumped or collected and is often in limited supply. Food is either distributed for free or brought from local markets, and most food distributed by humanitarian agencies is raw and often un-processed – for example, in the form of flours or grains. As a result, refugees living in camps face considerable physical hardship and are living day by day ‘just trying to survive’ (Refugee living in Uganda). Despite this, many camps have been in place for over twenty years. The emotional burden of living in a temporary and uncertain state for decades cannot be overstated, and in some cases has led to dependency on aid structures.

For those wishing to learn more about the daily realities of life in a refugee camp, I would encourage readers to seek out reflections from refugees themselves – rather than relying on retelling and translations produced

through the humanitarian system. For example, www.kakumablogging.com is a platform dedicated to sharing the stories and experiences of refugees living in Kakuma camp (Kakuma blogging 2023). Many such resources are now available to create space for the voices of refugees and hear from them directly on the issues impacting on their lives (Global Refugee-Led Network [GRN] et al. 2022).

In terms of energy in camps, the picture is a mixed one. Humanitarian energy is a broad concept, defined as the ‘institutions, policies, programmes, global initiatives, actions, and activities which use a range of sustainable and fossil fuel energy sources in contexts of displacement to meet the energy needs of people in camps and urban settings, self-settled refugees, host communities, and internally displaced people’ (Rosenberg-Jansen 2020: 17). The field is an emerging one, with the first substantive action on sustainable energy only starting in 2013 (Lahn and Grafham 2015). Previously there was a lack of detailed considerations of energy needs within displaced settings. It was generally assumed that expensive diesel generators were provided to camp operators and refugee communities were given small amounts of firewood to cook their food. To many, this was the extent of the energy lives of refugee communities. However, as we shall discover in the coming pages, the world of energy is considerably more dynamic than this: uncovering how energy is used in humanitarian settings offers many revelations and exposes the importance of electricity and cooking resources in displacement situations.

Firstly, it is important to clarify the use of the word ‘energy’. Generally, energy is considered to cover lighting, heating and power technologies (Ibid.). The term *energy* is used flexibly throughout the book, as many practitioners and refugee communities use energy as a byword or general term when describing a specific technology or use of fuel. However, the term ‘*energy access*’ is somewhat more complex. The statement ‘many refugees have no access to energy’ is frequently used, but there is a nuance here. To be completely without energy access is almost impossible – as to even cook our food and boil water we must use some energy. Many refugees use firewood and open fires to do this, and often have access to a very small amount of lighting or electricity.

The World Bank have developed a detailed system to assess how much energy people have and group this access into ‘tiers’ – tier 0 being almost nothing and tier 5 being equivalent to full power. This system is called the Multi-Tier Framework (the MTF), and more information is available for those wishing to learn more about different levels of energy (ESMAP 2015). However, in non-technical speak, tier 0 is roughly equivalent to either using basic technologies – such as firewood, charcoal, candles, kerosene, light from fires or basic electric lighting such as a torch. Tier 1 access is similar to being able to use a couple of light bulbs and maybe

enough electricity to charge your mobile phone – for example, by using a small solar home system (SHS). Above tiers 2 or 3 is generally considered ‘modern access’ to energy, and in countries in Europe most people have access to tier 4 or 5.

One of the most startling things about working in the humanitarian sector was how little different levels and forms of energy access were understood, with many people classing access as a binary of ‘no access to energy’ or ‘total access to energy’ whereas almost always the reality lies in between these two points. Therefore, to be more accurate, the statement ‘many refugees have no access to energy’ should read ‘many refugees have no access to *modern* energy’. While this may seem overly specific it matters a great deal in practice, as there is quite a difference between having no energy at all and only having access to basic technologies such as firewood. The complexity of some of these terms are explored in a paper by Al-Kaddo and Rosenberg-Jansen (2021) for those wishing to consider these differences in more detail. Even within the coming chapters the nuances around energy and energy access are hard to maintain, and at various points in the book both terms are used flexibly to explore an understanding of the realities of life with access to minimal energy.

Energy Spaces: Refugee Energy Users and Social Practices of Energy

A number of surprising elements emerged during my initial research on humanitarian energy. First among these was the extent of energy present in refugee camps. All the homes and business spaces I visited used some form of energy, and energy products and services were very visible in the camps. In theory this should not be a great surprise, and in many ways it is obvious that energy is an essential part of life in displaced contexts as it is in other locations. However, when I turned to explore the academic literature on this topic I was surprised to see very little academic consideration of the energy needs of refugees. As the sections below explore, many literatures could be relevant to the examination of refugee energy but as yet do not cover the topic in detail.

Exploring the ‘secret life of energy in refugee camps’ (Rosenberg-Jansen 2022b: 1) requires us to understand the spaces and uses of energy in refugee homes, businesses and public facilities. Academic authors have considered the social practices of energy in the global north, contrasting energy as a practical or technical issue with energy conceptualised as a core part of social needs and interactions (Hargreaves and Middlemiss 2020). Much of this literature seeks to understand how technical approaches to energy (which areas have power, what appliances are used and how much energy is consumed) differ from the social uses of energy (what energy means to people, how they use it as part of their everyday lives, and how social and

cultural patterns influence energy use). In UK and European contexts, this debate often centres on the social, physiological and communal aspects of energy consumption (Whitmarsh 2011; Wilhite et al. 2000). This literature frequently focuses on the decentralised energy transitions currently happening in western economies (Bridge et al. 2013; Eyre et al. 2011) and can include analysis of public perceptions and cost savings (Attari et al. 2010), understandings of climate change (Spence et al. 2011) or how European communities react to renewable technologies (Devine-Wright, 2005). In refugee contexts, however, these topics remain largely unexplored and detailed descriptions of the spaces and places of humanitarian energy have not been developed (Rosenberg-Jansen 2022a).

Evidence from energy-demand research is helpful here, drawing on practice theory and sociology – for example, Elizabeth Shove’s research, which focuses on how ‘energy is woven into the fabric of society’ (Shove and Walker 2014: 41). Shove and Gordon Walker conceptualise ‘energy not as a cause or consequence of social systems but as an ingredient of the social practices and complexes of practice of which societies are composed’ (Ibid.: 46). Energy practices are considered as a core part of how the ‘dynamics of demand’ are constituted, including a mixture of everyday activities such as travelling, cooking and watching TV (Ibid.: 52). There is considerable work on social practices and demand within western cultural practices, such as work by Shove (2003) and Stephenson et al. (2010). This literature is supported by social-practice theory, which examines how energy practices and institutional action come together, and the pragmatic choices that govern cultural choices (Schatzki, Knorr-Cetina and von Savigny 2001). Cultural theory and ethnography have also been used to further understand experiences of energy and the role it plays in people’s lives (Mackley and Pink 2013; Pink 2011; West, Bailey and Winter 2010). Exploratory work on the social practices of renewable energy has been conducted in Kenya and sub-Saharan Africa (Barry, Steyn and Brent 2011; Karekezi and Kithyoma 2002; Lay, Ondraczek and Stoeber 2013), and some research has evaluated knowledge and perceptions of renewable-energy technologies within development settings (Zyadin et al. 2012). In particular, gender and energy access have provided fruitful avenues in development research (Daigle 2022; Listo 2018). Understanding the social importance of energy is one of the elements developed by this book: chapter 1 considers in detail how refugee households view energy and how these values are linked to social, national and cultural practices.

To date there has been limited in-depth research on the social aspects of energy within refugee communities. There are a few studies that analyse how energy access can improve refugee economic opportunities (Lahn and Grafham 2015); how displaced people use local, natural and human resources to supplement their fuel allowance (Lyytinen 2009); fuel-efficient

stoves and conflict (Abdelnour and Branzei 2010); and a description of the types of energy services used by displaced people (Lehne et al. 2016). In addition there is some geographically focused work on Lebanon's response to Syrian refugees (Williams 2014), technology-focused solutions such as the IKEA solar-homes initiative (IKEA Foundation 2017) and ethanol-fuelled households in refugee camps in Ethiopia (Egziabher, Murren and O'Brien 2006), as well as wider contextual research on the policy situation surrounding energy needs in humanitarian emergency responses (Van Dorp 2009). New and emerging research has also started to focus on the issue of co-design and co-development of energy solutions with displaced people (Nixon et al. 2021; Robinson, Halford and Gaura 2022) and the importance of energy access for refugees in Bangladesh (Rafa et al. 2022).

Refugee camps encompass multiple networks, uses of technologies and points of interaction, and offer sites that can be examined to understand how networks and refugee policies are constructed. There is already a considerable literature on the social and cultural environments of refugee settings, including research by Liisa Malkki in Tanzania (1995), Cindy Horst in Kenya (2006) and Christian Williams in Southern Africa (2012). Much of this literature provides examples of situated ethnographies, which link theories of encampment with the lived experience of refugees in specific locations. The humanitarian literature on East Africa (De Montclos and Kagwanja 2000; Jaji 2012; Practical Action 2020; Rogers and Bloom 2016) is also relevant as the focus-country examples for this research are Kenya and Rwanda. Although these authors often cover cross-cutting issues such as health, disability, age, religion and gender (Fiddian-Qasmiyeh et al. 2014), energy has remained largely absent from their work. To some extent anthropology has lent itself to analysing infrastructure and technology from a social perspective. Ethnographies of infrastructure are becoming increasingly common, and Jamie Cross and Alice Street (2009) have explored the role of anthropology in analysing poverty and lives 'at the bottom of the pyramid'. Social historians and anthropologists have also turned to the electricity sector to understand the role energy plays in people's lives – for example, Thomas Hughes's (1993) *Networks of Power* and Tanja Winther's (2008) *The Impact of Electricity*. Winther's book on the impact of electricity provision on rural communities in Zanzibar directly concerns the role energy plays within people's lives. Anthropological energy-access studies such as this provide a useful background to this book, offering a model for ethnographic research on energy.

Alongside the academic literature it is important to consider how policy research can be relevant to debates on the social nature of energy demand in refugee settings. Indeed, if grey literature is not consulted the majority

of technical work on this topic would be neglected. Policy research on humanitarian energy (Grafham, Lahn and Lehne 2016; Gunning 2014) has much to teach us about the surprising world of humanitarian energy – for example, policy analysis from the Global Platform of Action (GPA) for Sustainable Energy in Displacement Settings (UNITAR, 2019), who are supporting structural recognition of sustainable energy programmes in refugee camps and displacement settings. The GPA’s ‘State of the Humanitarian Sector in 2022’ report outlines the progress being made towards Sustainable Development Goal (SDG) 7 on sustainable energy (GPA 2022). *Voices in the Dark* builds on such policy work to consider the spaces and practices of energy in refugee homes (chapter 1) and refugee businesses (chapter 2), and public and operational spaces in refugee camps (chapter 3).

Energy Communities: Institutional Actors and Humanitarian Assistance

A second surprising element during the initiation of the research for this book was the number of actors, individuals and communities involved in energy access in refugee camps. Hundreds of NGOs, humanitarian agencies, development actors, donors, refugee leaders and community groups, local and global private-sector companies, and intermediary organisations were involved in the humanitarian energy world. But the recognition of this diversity of communities seemingly went unnoticed and undescribed in the humanitarian literature. Getting to know which communities of actors to speak to, which organisations to approach and how responses on energy were organised was deeply challenging.

Academic analysis from the fields of geography and science and technology studies was helpful in understanding how to approach who was doing what on energy in humanitarian settings. In particular, analysis on institutions (Douglas 1986), spatial relations (Massey 1984) and communities (Law and Hassard 1999) was useful in considering how actors come together to produce social dynamics. Literature on ‘energy communities’, which comprise both institutions and individual actors (Campbell, Cloke and Brown 2016), was deeply informative and constructive for conceptualising my research. Humanitarian energy communities can be viewed as having two core constituencies: practitioners and refugees. Understanding policy-making communities and the nature of practitioner voice is the focus of David Mosse’s (2006) work on the anthropology of aid workers and their programmes. This type of analysis ‘studies up’ to examine international development and aid mechanisms, using anthropology to study contemporary society (Macclancy 2019; Nader, 1972). Some academic traditions suggest studying energy-policy transitions (Love and Isenhour

2016; Winther and Wilhite 2015) using ethnographic methods such as observation, action research and participating in development policy as a researcher or consultant. Energy communities in humanitarian settings also include refugees and host community groups. Understanding the practices of refugees and detailing their experiences of energy can be carried out through ethnographic methods, but also by employing action research methods and using alternative interviewing techniques. For example, there is some literature on participatory approaches with regard to energy in refugee camps and rural communities in developing countries (Abdallah 2015; Bates et al. 2002; Rouse 2002). My research critically engages with these issues by detailing how different communities value and perceive energy access, drawing on ethnographic methods to bring refugee voices into the heart of the research.

A key area of literature that is relevant for the arguments presented in this book is the analysis of the structures of humanitarian assistance, grounded in the field of refugee studies, and specific work on the politics of aid and refugee communities (Betts, Loescher and Milner 2011; Crawley 2017; Loescher 2001) – including research on refugee economies (Betts et al. 2014), self-reliance (Easton-Calabria and Omata 2018) and the structures of protection (Scott-Smith and Breeze 2020). This literature suggests how refugees access resources, exploring dependency on humanitarian aid and self-reliance (Kibreab 1993: 321). Much of this analysis critically assesses emergency assistance to refugees, asking how refugees make a living and whether aid is ‘imposed’ (Harrell-Bond and Chambers 1986; Zetter 1988). Balance and nuance are important within these debates, as some authors argue that institutional measures to push refugees to become self-reliant can be destructive (Easton-Calabria and Omata 2018; Hunter 2009) while others describe the independence of refugee communities (Clements, Shoffner and Zamore 2016; Pascucci 2017). Recognising ‘dispersed dependencies’ is critical in understanding the multiple and complex ways in which refugees engage in a variety of social, emotional, physical and other dependencies that are both related to and independent of humanitarian systems (Easton-Calabria and Herson 2020: 44). Although significant work on UN institutions and their policies has emerged over the past twenty years (Betts, Loescher and Milner 2011; Black 2001; Bornstein and Redfield 2011; Loescher 2001), limited critical evaluation in the energy space has taken place. Recent publications have started to analyse the role of humanitarian institutions in providing energy (Grafham 2020; Rosenberg-Jansen 2020), but have not yet started to explore in detail institutions’ and humanitarian organisations’ action on energy within camps. Chapter 4 considers these issues further in its presentation of the provision of energy in refugee camps.

Energy and Politics: Forced Migration and Humanitarian Assistance

The third surprising element uncovered at the start of my research was the extent to which energy was deeply political in refugee contexts. Gone was the relatively neutral use of the technical terms of electrical engineers and energy economists, and in its place were openly derisive comments about the value of energy in refugee lives. As chapters 4 and 5 evidence through the depiction of the views and judgements of humanitarian actors, the provision of energy in refugee camps is by no means a neutral set of technological choices. Rather, humanitarian actors are making choices on who deserves energy and how refugee communities are supported in accessing sustainable solutions.

The field of forced migration studies provides literature here on the politics of life, questioning the role that humanitarian organisations play in refugee lives and examining whether humanitarian choices are based on principles of neutrality and impartiality or whether they are the result of political choices (Steiner, Gibney and Loescher 2003). This discussion helps to illuminate who is doing what in humanitarian energy contexts: in many cases, informal communities and enterprises are providing many essential social and development services, while humanitarian organisations are focused on only providing life-saving interventions (Rogers and Bloom 2016). Didier Fassin's 'humanitarian politics of life' (2007: 502), in particular, operates as a useful theoretical frame for my analysis. Fassin defines the politics of life as 'politics that give specific value and meaning to human life', which emerges as part of humanitarian action and shapes the 'evaluation of human beings and the meaning of their existence' (Ibid.: 500–1). Fassin's work enables a critical analysis of humanitarianism, exposing how aid agencies shape refugee energy access through political structures and the micro-level politics of practice. This framing considers both the structures and practices of humanitarian action, to understand the political nature of energy access.

Fassin's concept has been applied to humanitarian technologies by a number of scholars. For example, the framing is used by Tom Scott-Smith to analyse 'the hierarchies of humanity that relief work creates' and the way that 'international aid agencies institutionalize inequality while claiming to treat people equally and impartially' (2019: 510). Scott-Smith focuses specifically on refugee shelter, looking at how political assessments are embedded in technology-centred interventions (Ibid.: 509). Several other authors have also applied this approach to humanitarianism (Bornstein and Redfield 2011; Fassin 2010; Hyndman 2000). My work draws on these ideas to understand how energy is viewed as a 'basic need' within the

humanitarian sector, examining how decisions about energy are political (Brown and Cloke 2017).

The literature on the humanitarian ‘politics of life’ includes a related concept, developed by Ilana Feldman (2012: 155), on the ‘politics of living’ within Palestine. The politics of living is what happens when ‘humanitarianism moves from crisis response to a condition of life’; it shifts attention from the work of aid agencies to the strategies of refugees, who have to carve out a ‘politics of living in the humanitarian space’ (Ibid.: 155–56). My work engages with many elements of Feldman’s discussion, which relates directly to the impact of humanitarian agencies in providing services. However, I have not focused on the national characteristics of displaced people or how their political claims relate to access to services, as Feldman does, because my research focuses on energy provision rather than on access to legal rights. Instead, I use the term the ‘politics of living’ in a more general sense – one adapted from Feldman to refer broadly to the dynamics of being, surviving, living and thriving within humanitarian contexts. I examine how access to energy is related to quality of life, and to evaluating what role humanitarian agencies have in providing energy.

This book explores both disputes about the provision of energy *and* the value that energy has for communities, including how energy resources are secured and accessed by refugees as well as how they are provided by humanitarian agencies. My use of the ‘politics of living’, therefore, draws on Feldman’s analysis and Fassin’s work on the politics of life but nuances these conceptions to draw attention away from the binary divide of life versus death to encompass what living beyond survival means to people. In humanitarian spaces, this means access to a range of products and services that meet the full energy needs of refugee lives, not just the provision of basic energy products needed to prevent loss of life. In particular, the literature on the politics and anthropology of infrastructure ties into this debate, suggesting that ‘ethnography can open up’ narratives of modernisation, of joy and of energy technologies beyond traditional humanitarian conceptions of providing life (Larkin 2013: 334). For example, the work of Brian Larkin on the politics and poetics of infrastructure (Ibid.), and by Ed Brown and Jon Cloke on the ‘political economy of energy choices’ (2017: vii), enables us to understand some of the ‘messy realities’ (Humanitarian practitioner interviewed in London, UK) of humanitarian energy on the ground.

In summary, existing academic work on energy spaces, energy communities and the political nature of energy has much to teach us in the uncovering the importance of energy in refugee camps. Literature that illuminates refugee stories, literature that critiques the politics of life in refugee settings and literature that reflects upon the global nature of

humanitarian action will be drawn upon in the coming chapters to support arguments made throughout the book.

The Literature on Energy in Humanitarian Contexts

Existing Evidence and Research Rationale

Access to energy has not traditionally been considered as a basic human right when responding to humanitarian emergencies (UNITAR 2019). Importantly, energy is not formally part of the humanitarian cluster system, possibly because energy needs are placed at the bottom of the urgency list in the haste to respond (Bellanca 2014). In recent years a considerable amount of new evidence has been published on humanitarian energy. Indeed, we can now characterise the sector as *emergent* rather than *nascent* (Rosenberg-Jansen 2022a). Despite this intensification of work on the topic several research gaps still exist – including the four areas outlined below.

Firstly, knowledge on technologies and energy demand in refugee camps. Research on the energy sector is often focused on the sources of energy – in particular, renewable technologies. Within refugee camps, renewable solutions usually centre around solar energy (due to the advanced nature of this technology and the natural solar resource available in refugee-hosting countries), although there is an increasing use of renewable biomass and biogas, wind generators, micro-hydro, geothermal and waste recycling on an ad hoc basis (UNHCR, 2019a; Van Dorp 2009). Previous energy studies do not go beyond the technical and often fail to examine existing sources of energy and uses within refugee communities. Understanding the roles of various technologies and how they are utilised within humanitarian systems can inform policy and potentially help improve international development programming. Analysing how energy is used within camps can also provide a new theoretical lens for energy-access scholars.

Secondly, although policy research has developed some quantitative information about the amount of energy that refugees consume and the sources of energy available in camps and displaced urban settings (for example, the Moving Energy Initiative 2017 analysis and GPA in 2022), qualitative research on refugee energy use is rare. It is therefore essential to explore not only energy supply but also how energy is understood and valued. There is limited practitioner and academic research exploring the detailed practices and policies of energy for refugees. This book hopes to fill this gap in part by qualitatively examining *how* humanitarian energy is happening on the ground in refugee camps. This includes studying how refugees access energy and how the humanitarian community support

them in securing this access – building on the work of Sharon Abramowitz and Catherine Panter-Brick on ‘ethnographies of practice’ (2015: 10) to understand how these groups act in concert. As Mosse (2006) pointed out almost two decades ago, there is a need for academic research that provides detailed, nuanced understandings of the role of actors and institutions within the aid and international-development sectors. Accessing energy policy is a ‘black box’, the decisions, actions and processes of which are not visible to external parties. This is a problem because if we do not know what energy programmes are designed to do, they cannot be constructively criticised or be adapted to be more inclusive. Humanitarian policy communities are judged as being ‘successful’ and influential because they enlist stakeholders and generate funding for a specific humanitarian area rather than being evaluated on more substantive ways that improve the lives of refugees (Buchanan-Smith 2003; Heeks and Standforth 2013). Moreover, emerging evidence suggests that humanitarian agencies have a limited role to play in delivering energy solutions on the ground (Grafham 2020).

Thirdly, practitioner knowledge on how refugees access energy adds to our understanding about how humanitarianism operates and who it engages with. In particular, applying an analytical lens and critical refugee studies literature to energy access helps develop a more detailed and rigorous analysis of how change happens in refugee camps. In this book I provide a detailed description of the views and values of a range of actors within the humanitarian energy sector, a community comprising both policy-makers and local communities such as local host government members and NGOs (Arce and Long 2000; Lewis et al. 2003). Refugee communities include households, activists, community leaders, local social groupings and those who have a ‘sense of belonging together’ (Gold 2005: 3).

Fourthly, scholarship on the lived experience of refugees can help to illuminate how energy access differs within refugee communities. This speaks to the academic literature on the ‘nuanced understanding of lived experience’ (Lenette and Boddy 2013: 72) and taking ‘alterity seriously’ (Law 2000: 2). This study directly contributes to these debates by providing an in-depth description of the experiences of refugee energy practice in East Africa. My research considers the lived experience of refugees *and* the values of energy professionals, within the context of the emergence of this sector, to gain a more detailed and nuanced understanding of current changes. Focusing on values and perceptions, and listening to actors as if they are their own ethnographers, enables their agency to be taken seriously (Mol 2010). By focusing on values and conceptions about energy, the book focuses in particular on people whose views and experiences are rarely heard when it comes to energy in refugee camps: the *Voices in the Dark* of the book’s title.

Methodological Approach

Research on energy can take many forms: it can encompass the analysis of demand and energy uses or involve studying supply routes and sources of energy, conducting socio-technical explorations of systems, modelling needs or developing ethnographic descriptions of lived experience; it can also entail geographic mappings of national and local priorities, qualitative studies of technological objects, sociological descriptions of governance structures, assessments of institutional action, and power or discourse analysis. Such studies could use quantitative, qualitative or mixed methods and choose to explore local, national, regional or global sites of study. My research draws on many such elements, but I have deliberately chosen to not use just one method exclusively in order to capture the range of experiences on energy in the camps. As a result I used a number of social science methods such as interviews and observation to develop the results presented in this book.

This work can be considered an ethnography since it is a rich and grounded description of communities: a ‘study of people in naturally occurring settings or “fields” by methods of data collection which capture their social meanings and ordinary activities, involving the researcher participating directly in the setting, if not also the activities, in order to collect data in a systematic manner but without meaning being imposed on them externally’ (Brewer 2000: 6). While this means that I draw on anthropological methods – in particular, interviewing techniques for lived-experience data collection (Clifford, French and Valentine 2010; Ingold 2014) – my research does not present a single-sited ethnography of humanitarian energy in one location (conceived as a detailed and comprehensive portrait of a particular community or professional culture). Rather, I have focused on producing an ethnographic snapshot of energy life in the camps in Rwanda and Kenya, alongside an evaluation of how policy-makers and practitioners view energy in very different ways. This builds on the work of Mosse, who suggests that ‘ethnography is less concerned with what international policy ideas are, than with what they do, and how. This requires careful exploration of complex institutional and social processes, often written against powerful self-representations of experts and professionals’ (2007: 2).

The results presented in this book bring together experience from my practitioner roles as a humanitarian energy specialist and as a research academic analysing the lived experience of energy in refugee camps. Over the past ten years I have conducted multi-sited fieldwork in refugee camps in Kenya and Rwanda, alongside data collection on the global humanitarian energy sector based on discussions with practitioners in London, Vienna, Geneva, Oxford, Brussels and many other cities. This enabled

me to engage with high-level policy debates and emerging projects, as well as experience views on energy projects and supply within refugee camps. I conducted multiple trips to the Kakuma and Kalobeyei camps in Kenya and the Mahama, Kigeme, Nyabiheke and Gihembe camps in Rwanda. Alongside these trips, I also held interviews and meetings in Nairobi, Kigali and regional towns and villages in Kenya and Rwanda. Data collection also involved conducting both semi-structured interviews with practitioners, largely conducted remotely online, and observation at international events in Geneva, New York, London, Amsterdam and Lisbon.

Using these methods, I have used energy anthropology and engaged approaches to produce an *engaged energy ethnography*, defined as: a rich description of the range of energy experiences of policy-makers, practitioners and end users, produced using a situated, engaged and ethical approach to understand how and why energy matters to a range of communities. Engaged energy ethnography allows the voices of refugees and practitioners to speak for themselves, represented through the cultural and political framings they find important. Building on direct evidence from refugees and practitioners I developed a key set of themes and patterns emerging from data collection, to understand how energy is valued in humanitarian settings. Engaged energy ethnography builds on ethnographic and anthropological approaches: it requires spending time directly with communities, listening to their values and opinions in their own words, and understanding holistic dynamics within locations. My approach draws upon qualitative data, contrasts the views of communities and practitioners, and does not aim to paint a singular picture of any one community.

As a consequence of this, I present the views and opinions of refugees and practitioners in their own words. To do this I note in quotes only the place and location of interviewees. For example, 'Refugee living in Rwanda' or 'Humanitarian energy practitioner in the UK'. Some readers may be surprised at this formulation, and consider the lack of names or further descriptors associated with interviews disconcerting. However, this attribution style was chosen to ensure the anonymity of interviewees, and especially to protect refugee research participants who may be able to be identified if much further information was provided. This form of referencing interviewees could also be said to obscure the positionality and power of different individuals – a criticism that to some extent is a fair one. I have tried to mitigate this risk by describing the roles and power held by individuals, and creating a balance in how interviewees and their positionality is described.

My own positionality as a researcher is also important here. Working as a woman on the topic of energy was often seen as surprising and

non-threatening, and so enabled access to refugee homes and businesses where others may not have been invited in. My experience working as a practitioner also facilitated access to programmatic and research spaces – and, importantly, meant that many humanitarians felt free to speak openly with me based on our existing relationships and established trust. Both types of privilege are relevant here, as they enabled access to spaces and discussions that may not otherwise have been possible. Within this context I have tried to stay faithful to the stories and perspectives of refugees and practitioners as much as possible – grounding such knowledge within lived experiences and paying attention to narratives of power (Sultana, 2022).

Within the book, I have tried to reflect a range of voices to demonstrate the complexity and shifting nature of energy in refugee camps. The aim of such an approach is to analyse what perceptions mean in political and humanitarian terms, going beyond ethnographic description to produce an informed opinion on energy perceptions and access in refugee camps. Developing an engaged energy ethnography in refugee settings was challenging because the fieldwork produced many forms of evidence and multiple narratives from within the humanitarian community and camps. To resolve this, I present evidence throughout this book in the form of detailed quotes from interviewees – narratives and explanations drawn directly from participants and told in their own words, contextually embedded within the situations in which they were told.

Book Structure

This first chapter has provided a brief introduction to energy in humanitarian settings – outlining the surprising nature of refugee energy experiences, highlighting the considerable number of communities and actors involved in energy in refugee camps and providing initial reflections on the political nature of humanitarian energy. A brief outline of relevant academic literature and the methodology underpinning the empirical analysis in the book has been offered within the sections above.

Chapter 1 focuses on household energy and outlines how refugee families value energy in multiple ways: in terms of social, cultural, economic and emotional connections, as well as valuing technologies and the usefulness of energy products. The discussion engages with the literature on the social nature of energy demand, describing how refugees value energy in terms of social engagements and cultural priorities. Throughout the chapter I describe the values that people place on energy, including practical and economic values, and consider how energy is linked to the quality of life in refugee camps. I suggest that refugees know a considerable amount

about energy and often secure access to it themselves through buying products and services directly from suppliers. Most households have ownership of energy and responsibility for their own electricity access. This can be understood as challenging the self-reliance narrative put forward by some humanitarian agencies: in terms of energy, refugees are already largely independent and self-reliant, so policies and narratives that push for further independence may be redundant. In the chapter I show how access to energy in the camps is seen as a sign of progress and development, and as having direct benefits in improving quality of life, as well as opening up a discussion on the political nature of independent access to energy services by refugee communities.

Chapter 2 highlights one of the most noticeable uses of electricity in refugee camps: energy used by refugee businesses and entrepreneurs, who use energy to power their shops, restaurants, cafés and other spaces. I show how refugee businesses secure and supply energy, and detail how energy is essential for businesses – enabling people to create additional income, as well as supporting the social and communal development of the camps. I argue that energy enterprises support economic life within the camps and provide a critical resource for refugees. I link this description to the literature on energy communities and outline how business users of energy are often not considered by humanitarian organisations. As a result energy for refugee enterprises is not planned for, embedded in interventions or supported by humanitarian programmes. The core argument of the chapter is that energy enterprises are one of the key constituents within energy communities in the camps, and businesses are the main group supplying energy products and services to refugee communities. I argue that refugee businesses are playing a key role in the politics of living in refugee camps, and are in fact enhancing the quality of life for refugee households by enabling access to energy.

Chapter 3 examines energy in community facilities and operational spaces within the camps, suggesting that access to energy is limited and, even where spaces such as offices are connected, power is often intermittent and only available for some hours of the day. I describe how refugees feel frustrated by this and detail their concerns about why water, sanitation and hygiene (WASH) facilities, schools, clinics and public spaces are without power while some operational spaces such as offices, staff compounds and registration centres have higher levels of access. The core argument of this chapter contrasts unequal access to energy in public spaces with energy for humanitarian operations, questioning why some spaces receive access and others do not.

Chapter 4 considers the provision of energy and starts to explore how energy is supplied and accessed in refugee camps. In this chapter I present

the value of energy as viewed by humanitarians, the roles and responsibilities within organisations for the provision of energy, and disconnects in the humanitarian energy system. I also consider how institutions provide energy for refugees, finding a lack of comprehensive action on delivering sustainable solutions. This is presented in contrast to the considerable amounts of electricity available for humanitarian staff in their homes and businesses. Throughout the chapter I argue that humanitarian organisations are often failing to provide the energy that refugees need. This, I conclude, is having a negative impact on the quality of life of refugee communities.

The last chapter offers conclusions and summarises the key findings of the research, developing ideas on whose values are embedded within decision-making. This chapter raises questions about who energy is designed *for* in humanitarian settings. The evidence is presented in terms of the literature on the nature of power and perceptions, the politics of life and the way that these issues can inform academic thinking on humanitarian systems. I argue that some views and values on energy matter more in refugee settings than others. I also suggest that organisational modes of governance, and the roles of institutions, often determine the level of energy access for refugee communities. The core argument of this chapter is that energy access is political in nature and that humanitarian systems structure the quality of life of refugees. There is a disconnect, in other words, between the needs, desires and values of people living in the camps and the humanitarian systems that are there to support them. Power, control of resources and access to energy in these spaces are not equitable. There is a division between how refugees in the camps already procure their own energy and the programmes that provide electricity. I suggest that the governance of humanitarian energy programming is political and that power (in both senses) has a real impact in refugee settings.

Throughout this book I return repeatedly to the idea that some opinions on energy matter more than others, and that institutional political power has a significant impact in constraining the levels of energy access in refugee camps. As we have seen, the title of the book, *Voices in the Dark*, lends itself to several meanings. The first is more literal: many refugees living within the camps struggle without lighting or power in the night and are limited by the darkness this brings. The second meaning is figurative: institutional users of power and global policy-makers often have limited knowledge and experience of energy needs within the camps; for them, darkness comes in the form of not seeing the realities of energy needs and choices on provision. Political choices about energy are unrecognised and value judgements are being made, perhaps unconsciously or unintentionally, by humanitarian systems. This too is

a form of darkness, one created by the complexities of humanitarian action. Refugee voices, meanwhile, speak into darkness, which is demonstrated through a lack of knowledge on the part of humanitarians about how displaced people use electricity, why it matters to them and how they come to access it.

Energy for Homes and Families

Introduction to Energy in Refugee Households

Life in a refugee camp is hard – the daily struggle to access food and water, to keep clean, to find meaning and security in the face of uncertainty. A lack of education opportunities adds to the problem of often not being able to legally or formally work. Legal, financial and emotional challenges increase the everyday worries of living. The absence or distance of friends and family compounds concern for those left behind, watching from afar as your country or region struggles with war, lies in the midst of conflict, faces natural disaster or experiences the impacts of climate change. These are just some of the many challenges reported to me during my time working in refugee camps. Within the hardship of refugee life, energy needs are woven through every home: electricity and cooking needs are ever present in the daily experience of life in a refugee camp.

The quiet undercurrent of energy is everywhere in the camps. In homes, corners are crowded with cooking pots and pans, phone chargers dangle from ceilings and out of drawers, fires smoke away slowly cooking food or boiling water, light bulbs flicker in the evening and the light of torches weaves in between homes. Matches, candles and stubs of burnt material lie in clusters and bins. Lanterns – kerosene and solar lamps – are stacked in rooms waiting for dusk. Fans, clocks, radios and batteries are placed on walls and cupboards. Sometimes a rice cooker or liquefied petroleum gas (LPG) stove lies on the floor or sits balanced on a shelf. Small cookstoves and fires pump out smoke into gardens, kitchens and alleyways. Piles of firewood, canisters of gas and lumps of charcoal sit waiting to burn.

Music and laughter echo out of doorways, and the hum of generators buzzes across the camps. The smell of diesel and firewood burning, the smoky whiff of charcoal and of food cooking wafts in the air. The zap of electricity and the ping of the mobile phone are never far away. In some spaces the blue light from laptops beams across rooms and snaking extension cables run through homes. Occasionally a blast of cold will blow out from an air-conditioner or fridge. Rarer still is heating from radiators or warmth for chilly evenings. The dream of electric or gas hobs, ovens, electric appliances, blenders, food processors, hoovers or washing machines

feels far away. Despite this, energy is everywhere in refugee camps. To deny its existence or importance would be naïve. Electricity and appliances may be in short supply, but the need and demand for energy – and the everyday use of fuels, firewood and electricity – covers the camps.

Experiencing energy in refugee camps is physical; understanding the role of energy in refugee lives is technological, but it is also social, economic and emotional. It is to these experiences – the use of energy in refugee homes – that this chapter turns: it explores the importance of both cooking technologies and electricity needs in refugee households. As one refugee, living in Rwanda, commented, ‘when we talk about energy, we talk about life’. Throughout my time spent in the refugee spaces I observed energy use in Rwandan and Kenyan homes to be relatively similar: many people use firewood and charcoal for cooking and have relatively limited access to electricity and electrical products.

Beyond the technologies of access so many of the refugees I spoke with mentioned how energy connections offered them improvements in quality of life. In their homes and shelters displaced people noted that access to energy meant being able to do household tasks easily and have a social life at home – and that having electricity, in particular, offered progressive advantages and opportunities for connections. The story of energy use in refugee lives is one of complexity, of self-sufficiency, of daily struggle to access resources. But so too is it a story of joy, of social and physical uses, and of the opportunities that energy brings. Most of all it is a story of how electricity access and ease of access to cooking resources improves quality of life and reduces the everyday burdens of living in a refugee camp.

Energy Spaces at Home and Household Technologies

Electricity in Homes: Lanterns, Lighting, Phones, Mini-grids and Electricity Connections

In Rwanda and Kenya many of the refugee homes I visited had limited access to lighting. Some used burning sticks or the light from their cooking fires, many used the light from mobile phones or hand-held lanterns in the evening. Sometimes solar home systems or larger solar lighting systems were available. While a few families were able to afford informal connections to local mini-grids or electricity suppliers, and therefore had access to light bulbs and other connections, most people only had access to basic energy technologies.

Writing about lighting in refugee homes is deeply challenging, as light is so often underappreciated or taken for granted. We can describe lighting in terms of the basic technologies available – lanterns, light bulbs and wiring. But technological descriptions do not reveal the realities of life without light. The experience of living in the dark is one of the most

extreme experiences of poverty (Mercy Corps and GPA 2020). The realities of minimal lighting are serious, and equate to living in the dark at home, with limited activity possible once night falls – around 7pm in Kenya and Rwanda. Some families mentioned they would walk to places in the camp with public lighting, to stand under streetlights to talk with friends and family. Some would go to the local markets or visit the small cafés and businesses in the camps to be able to talk or work in the evenings, returning home using torches, lanterns or burning sticks to light the way. Families used candles or torches and people reported being worried about accidents, violence in the dark and not being able to keep clean when they couldn't see things clearly. One very common element mentioned when talking about lack of light was boredom: life without light results in very limited social, education or work activities once the sun sets.

Lighting is becoming better because at the settlement time [when the refugees arrived], we had to use kerosene lanterns, and lamps and the burning sticks, while now we use different types of energy. The electric power and the other ones: candles, torches, phone torches, solar lanterns and solar systems. But there is still a long way to go because there is a big difference between using lighting energy solutions when comparing a candle. But for many people who have a solar system it is really getting better. Now we all need this, because there are still some people that use a burning stick. (Refugee living in Kenya)

Beyond basic lighting, some refugee families also used electricity and owned power sources. Walking through the camps, glints of silver and blue solar panels were often visible on rooftops and through doorways. The red or yellow casing of Solar Home Systems (SHS) jumped out in contrast to grey and brown rooftops. While larger home systems were sometimes seen, mostly smaller systems with one or two panels were used.

Refugees described the multiple benefits of energy and the change from using burning sticks or torches, and they proposed concrete ideas about how new technologies could help their families. For example, one refugee stated that 'it made such a big difference to our lives' to have energy in her home, and interviewees commented on how they could use public spaces more extensively if there was more lighting in the camps.

I am the first, the first to have electric power. I use it every day. I can say electricity is magical. It is good for the home; for the businesses; and, if they would put it in the streets, everything would be better. I use it for lighting every space at home. I charge my phone. I use the kettle for boiling water; it can keep people busy and talking. They [my family] can relax when the lights are on ... or watching television. My children stay in the nights with me in the restaurant – then they can't go wandering and fall or be outside in the dark. (Refugee living in Rwanda)



Figure 1.1. Blue solar panel for connection to a home in Kalobeyi, Kenya.
© Sarah Rosenberg-Jansen.

In the terminology of the energy-access world low levels of access are characterised as ‘tier 0’ or ‘tier 1’ under the World Bank’s Multi-Tier Framework (MTF), which is a system for assessing the level of electricity access available (ESMAP 2015). In non-technical speak, tier 0 is roughly equivalent to using either basic lighting technologies – such as candles,

kerosene or light from fires – or basic electric lighting such as torches or a solar lantern, while tier 1 access is similar to being able to use a couple of light bulbs and maybe enough electricity to charge your mobile phone – for example, by using a small solar home system (SHS).

Higher levels of electricity access – for example, from mini-grid connections – were common in the Kenyan camps, where informal suppliers have founded businesses to supply electricity to homes. This was less common in the Rwandan camps, where individual lanterns or SHS were more visible. Privately owned generators would often be placed in gardens or in external spaces behind homes – seen, for example, in the pictures and quotes below, which highlight the connections between refugee homes and refugee businesses.

I have three generators here and six in total. Two with my brother, one with my father, and three here. This one is older, it does not have the innovative water-cooling – as I was still trying with this one and the water kept falling. It overheats a lot and so I cannot use it much. I give my main one, her [gestures to the other generator that is on], a break when she is tired, from 4pm and 6pm. Then people are sleeping and do not need much electricity I think, so then I rest her and use this little one. Then when it is getting dark, I am switching on the big one, and she is powering through into the night.
(Refugee living in Kenya)

In both countries, there were a range of appliances within refugee homes. For example, fans, radios, TVs and clocks were common – as were batteries, extension cables and the ‘supporter objects’ needed to connect energy sources and appliances (Rosenberg-Jansen and Okello 2017: 1). Refugee communities expressed a desire for larger appliances – such as fridges, air-conditioning units and laptops. While I observed many such technologies, all too often these were within the business and operational spaces of the camps rather than in refugees’ homes. Despite this, electrical appliances were still often discussed during chats about energy – especially mobile phones and the importance of being connected to friends, family and the wider world. Often I would hear the noise from TVs or radios and these technologies would open up discussions on family life and people’s experiences in the camp. In general, homes in Kakuma tended to have a wider variety of appliances and to access more energy services, and there was a larger set of energy products and services on offer in the markets than in the Rwandan camps (Rosenberg-Jansen, 2019).

An overview of the energy needs and priorities in Kakuma is provided by Drew Corbyn and Mattia Vianello, who suggest that ‘household solar products are widespread. These have proved successful at providing bright lighting and power for charging mobile phones, at dramatically lower cost than other common solutions’ (Corbyn and Vianello 2018: 6). Their report



Figure 1.2. Old generator, Kakuma Kenya. © Sarah Rosenberg-Jansen.

also suggests that households connect to mini-grids and private generators, with many households spending more than \$60 a year for a light and plug sockets. The report describes quantitative research done on the importance of energy appliances in the home, suggesting that mobile phones, radios, televisions and electric lighting were ranked above cooking food and heating. It also highlights how expensive energy is in the camps, a viewpoint echoed by the refugees I spoke with.

My sister does not always have money for energy in the camp. It is a disaster! It is a big problem because she uses the phone for lighting in the house at night, so no phone means no light. She eats in the kitchen with the light from the fire, but it is not much. She has to cook early and go to bed because there is no light. She broke her leg walking in the camp at night in the dark. She needs more light in her life. I try to help and buy her things, and buy her charging for the phone in the shops. But she has many children and no jobs, so it means there is not enough money for all the energy she wants. She can save slowly, and she will buy a lantern for the house. I told her to wait, and get a good one like mine. It will last two years and she will have all the light she wants like me! (Refugee living in Rwanda)

Small-scale technologies such as individual solar panels or informal lighting connections were often strung up between refugee dwellings. Wires, extension cables and connecting equipment between sources of energy and refugee homes were visible everywhere in the camps. Often buried under beds or running along the back of alleyways between residential areas, cabling made appliance use possible in refugee homes. The physical spaces devoted to electricity in the camps were considerable: electricity wires flowed through bedrooms and kitchens; outdoors, long threads of black wiring often hung dangerously close to water buckets or were barely attached to ceilings. The feeling of being connected, and the physical hum of electricity, was never far away in Kakuma. This was slightly less so in the camps in Rwanda, which are smaller and where fewer electrical technologies were observed.

The many electricity technologies and spaces in the camps outlined in this section demonstrate the physicality of electricity within refugee lives. The lamps and lanterns, batteries, cables, wires, solar panels and generators live in both physical and grounded spaces, as well as having social and cultural connections beyond technologies themselves. Issues of how energy is used are considered in detail in the following sections, but hopefully this brief description has provided a glimpse into electricity technologies in the camps.



Figure 1.3. Extension cables, chargers and connectors in a home in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

Cooking in Homes: Firewood, Fuels, Cookstoves, Three-Stone Fires, Pots and Pans

Walking through the camps the smell of cooking was almost constant. The cooking lives of refugees are highly diverse and there were a huge number

of reasons why energy for cooking was important in refugee homes. Families reported having to spend hours a day involved in cooking meals. During my research I was invited into homes to have tea or share a snack, and was able to listen to women – especially – explaining how they cooked and used energy. Overwhelmingly these stories focused on how important food and family connection are, and few people focused specifically on cooking fuels or technologies directly during our exchanges.

In one of my first experiences of cooking in a refugee camp I was sitting with a young woman outside her home in Kalobeyei in Kenya. As she talked about the range of cooking pots, pans and cookstoves she used I was struck by the considerable spread of technologies, fuels and materials used. We often discuss ‘stove stacking’ (the use of multiple types of cookstoves to cook different foods) in the practitioner world (Shankar et al. 2020), but the refugee experience of using multiple cooking fuels and stoves was considerably more complicated than I had imagined. The lady described how she would use charcoal to cook one pot of food, the wood stove for another, she had a small solar thermal stove for keeping food warm and a donated donor stove that she reported she used sometimes – but which was in use as a waste-paper basket at that moment. As she detailed where she got the fuel for each stove, how much she paid and when she would use the stoves, it was clear the preparation of food, fuel collection and cooking took up the majority of her day.

Inside her home smoke bellowed out from the cooking fire – causing us both to cough and our eyes to water. I squatted beside her as we chatted and she stirred food over a small stove, and wondered how long I could stay crouching. The physical impact of cooking over traditional fuel sources and fires is not often discussed in the practitioner or academic literature: we rarely see descriptions of the burden on women who have to kneel, squat and crouch close to the ground to tend to the fire and stir food. But in the camps in Kenya my first thoughts and experience of cooking turned to the physical effort and exhaustion of the manual labour involved. A similar picture emerged in the camps in Rwanda, where the use of firewood and charcoal stoves was also common. In Kigeme some gasifier stoves have been sold in the camp, while in Mahama gas stoves and LPG have been provided by UNHCR and partners (Bisaga and To 2021; Patel and Gross 2019; Vianello 2016). A variety of cooking stoves and fuels are used within refugee camps across East Africa; however, firewood and charcoal were the most commonly used fuels in camps in Kenya and Rwanda (Corbyn and Vianello 2018; Practical Action 2020).

Within refugee homes cooking technologies and fuels were highly visible, including cookstoves, three-stone fires, pots and pans, and cooking fuels. Residents of the camp who had been there for longer were sometimes



Figure 1.4. Cooking equipment in a refugee home in Kakuma, Kenya.
© Sarah Rosenberg-Jansen.

able to create kitchen gardens, or small separate kitchens next to their main home, but often cooking was done immediately inside or outside homes. The outdoor spaces of cooking were vibrant and noticeable in all the camps. Where physical outdoor space was available many people would cook between their homes – in the small alleys or ‘yard’ spaces outside the dwellings. For example, in some parts of Kalobeyei refugees were allocated garden spaces next to their shelters, which were frequently filled with cooking pans, pots, cookstoves, washing and small containers growing vegetables. Firewood was sometimes stored on top of houses, or often in a corner of homes to avoid theft or rain.

Cooking, cooking, cooking. Sometimes I think I am only cooking all the day. The children always want to eat and I have to plan and think always about it. When to start preparing, how hot it will be, whether the food will be ready in time. With the wood everything takes longer, so it is better with charcoal. But that costs and we cannot always afford it. So sometimes it is both. I like beans and fresh things to eat, but often it is just mush and whatever we are given. But always I am thinking about cooking, it is eating all my time. (Refugee living in Kenya)



Figure 1.5. Kitchen garden in Kigeme, Rwanda. © Sarah Rosenberg-Jansen.

While firewood is distributed for free by humanitarian providers in the camps, the amount provided often does not meet refugee needs. As a result many people need to supplement their firewood ration by collecting firewood informally or buying charcoal from local producers. As well as fuels refugees also have to buy many of the cooking pots, matches and additional equipment they need to cook themselves. Within the markets of the camps it was common to see people selling charcoal and sometimes briquettes or pellets for cooking. Many of the small shops also sold cooking pans, water bottles, matches and cooking utensils. I often saw women walking through the camps carrying firewood or small wrapped packages of charcoal, having shopped for energy goods.

I sell charcoal to everyone in the camp, even the old people who cannot afford too much. It is good business, but I have to walk to the other market [in the town] and buy from there, and carry here. Sometimes my children are helping, but I try to make the older one be in school always. With the lady in the other market I am making deals, she is telling me how much she wants for this fuel bag, and I am talking with her, and she is reducing. She knows refugees – many here in this place – but also she is a refugee. So sometimes I am paying less and sometimes I am paying more for the energy I need, but when I talk with that lady, we decide together. (Refugee living in Rwanda)



Figure 1.6. Charcoal for sale in Kigeme, Rwanda. © Sarah Rosenberg-Jansen.

The relationship between food and cooking in refugee camps is certainly complex. On one hand, all families need to cook and eat every day. On the other, the number of organisations, markets, individuals and processes involved in the resources needed for cooking was overwhelming. In Rwanda, food distribution was still commonly carried out by humanitarian agencies who would provide basic carbohydrates – such as rice, beans, maize and some types of flour – but little in terms of vegetables or protein. In the Kenyan camps, the UN’s World Food Programme (WFP) used cash distribution systems for many households. This provides households with a small amount of money every month to spend on food. Refugees can then buy food from the shops and markets within the camps.

Cash mechanisms have many benefits – enabling refugees to choose which food to buy, and to spend their resources how they wish to. In many of the Rwanda camps, however, free distribution of food and fuel was still common – meaning that refugees had less choice and were reliant on humanitarian distribution systems. Much has been written on the benefits of cash systems in humanitarian settings (CALP 2022); however, in terms of the interaction between energy and income it was clear that the dynamic cash-based economies of the Kakuma camps were linked to more diverse energy systems and the diversification of fuels and cookstoves compared with the Rwanda camps. For example, there were many shops selling cooking equipment and food in the Kenyan camps. The markets in Kakuma also sell fried snacks, to supplement the home cooking that is mostly done by women.

Whether accessing food and fuel through humanitarian providers or by buying in the markets, energy for cooking was clearly an important part of life across the camps in Kenya and Rwanda. To understand energy needs further we now turn to consider how energy is used by refugee communities. The following sections examine the daily uses of cooking and electricity technologies in refugee homes.

Uses of Energy in Refugee Home Life

Energy Access and Practical Values

When we think of energy in our homes, we think of its uses rather than its technologies or sources. Energy use is rarely about the electricity or the plug sockets, the gas or the solar panels; rather, we think of the social and practical experiences of *using* energy. For example, how we use gas or our stove to cook dinner, the joy of having a cold glass of something to drink from the fridge at the end of a long day, the blessing of air conditioning in the hot summer or the warmth of heating in the winter. Increasingly we



Figure 1.7. Household cooking goods for sale in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

think of the appliances – the design and efficiency of our ovens, stoves, kettles, fridges, lamps and computers. And, of course, of the cost of energy – how much we spend on our electricity and gas bills. In many ways life in refugee camps is not so different. The uses of electricity and cooking resources are still critically important. The social and practical benefits of energy, the physical connections and the economic costs of energy drive refugee perceptions and values of different electricity and cooking technologies. Energy is valued for what it *provides*, not necessarily what it is.

All the interviews conducted with household members linked energy use to social and cultural connections, and were focused on what energy was for rather than the technologies or electricity sources themselves. Elizabeth Shove, Matt Watson and Nicola Spurling have suggested that energy use is connected to ‘outcomes of interconnected patterns of social practices, including working, shopping, visiting friends and family, going to school’ (2015: 275). While Shove’s work applies energy and social-practice thinking to larger-scale energy infrastructures in the global north, social connections also feature prominently in refugee settings. Interviewees talked about different technologies and types of energy use: of the eighty interviews conducted on refugee perceptions three-quarters mentioned the value of lighting, over half focused on power and electricity and only ten focused on firewood and cooking. But all interviewees talked about the

usefulness of energy and how it was connected to social, cultural, practical and community contexts.

In both Rwanda and Kenya interviewees consistently connected energy use to social life. For example, in the quotes below a refugee man explains how the lanterns and solar panels in his home were bought from markets and shops within the camp. During the interview we also spent some time discussing how his community – his friends and family – supported him in getting access to energy – for example, through loaning him money to buy the products and clubbing together to buy a generator and run this at reduced rates for Ethiopian households. The interviewee placed considerable importance on the practical elements of access: it was important to him that he had lighting and access in his home so that he was able to invite people over in the evening.

We have lots of electricity here – the TV, the radio, the phones, and the connections. I have a panel and some lanterns, so we have all the types of electricity we would need. And energy for cooking, the firewood and fuels. My favourite lamp is the red one [shows d.light lamp] as this is the easiest one to carry at night. I have others, but when I am walking to the hotel at night, I am carrying this one. It has a little light but it has a handle and you can swing it and the light will move across the road. This one I bought from the electricals shop in the Ethiopian market. In the Somali market there are other shops that sell more lanterns but I bought this one and it is useful. It cost a bit, but it is worth it to have a nice red lantern. (Refugee living in Kenya)

We have lanterns and everything else. I have the TV that is connected to the small generator of our community and I pay for that when I use the TV. The man there is running it for us Ethiopians, and he likes my family, so we can use what we want and pay him when we have some money. That is very good and I always try to pay when I can. It is very open and good for all our houses. I also have the small panel [points out small red solar panel on roof]; this one is extra good because it powers just one cable [inside the house he showed me an extensive cable and battery set up]. This cable is used for charging phones; I am charging this one now for my friend and he will pay me only 20 shillings [about £0.20] and it is nice to do it for him. Then I have a bit more money, and I pay for my TV connection that way. (Refugee living in Kenya)

Energy products were highly visible within homes and were an integrated part of daily life. This interviewee noted how the nature of the lantern itself (its construction, its red colour, the handle that means it can be swung) was important to him, but so too was the experience of having light. He described how he would often swing the lantern and watch the light move across the road. The practical value in these

quotes is obvious: power enabled the family to feel connected to the members of their community and share experiences such as watching the football and having friends over to visit. The interviewee talked about the importance of electricity for relaxing and enjoying the evening, suggesting that the social values of electricity are multifaceted and span both social and use values. The connections between the physical properties of energy technologies and social values were evident in many interviews, like this one, but it was clear that the *usability* of energy was important as well as the appearance or design of the products and appliances themselves. In general while the majority of refugees described the uses of their energy products, few detailed the design or physical dimensions of technologies.

This view was common in my interviews, with many people highlighting physical connections: how access to electricity enabled people to connect more easily. The quotes below also highlight the physical proximity of homes to wires, summarising how the home of one family is surrounded by electrical wiring due to its placement close to a mini-grid provider, and how they are ‘looking up ... and seeing all the wires’.



Figure 1.8. TV connections surrounding refugee homes in Kakuma, Kenya.
© Sarah Rosenberg-Jansen.

This is my home; there is almost no electricity here. This is why I go for training and energy at school. There I am using all the electricity – for my phone, for my studies, in the classroom for my tasks, and for the computers when there is extra time. Here, I don't have that. I am seeing all the wires of my neighbour, but we cannot afford that. Here, in the garden, we cook outside and I am looking up at my neighbours' dish and all his connections. I am asking, 'How can they afford that?' and we are often asking to borrow from him. But he is a Somali, I think, and he is not welcoming us to disturb him all the time. I don't know all the things he has connected, but he has a TV and a radio, and a fan for people who come to visit him. He is a popular man, and he is getting support from somewhere, making extra money with his business as well. So, he can afford everything. Even satellite TV in colour. He uses a solar lantern too, but most of the connections are from the generator behind the market. (Refugee living in Kenya)

That is what we would like, I think, because that is clean energy like we learn about in class: the renewable electricity would be better. His generator is smelling and making a lot of noise – we will visit and you will see. My mother wants the big panels as well, she says it is good to be quiet and the panels are clean and quiet. We like living here, it is quiet under all the wires. But then we look up and see the big post [gestures at radio and communications towers] and wonder what else is happening. (Refugee living in Kenya)

These quotes suggest how energy can flow across spaces in refugee camps – not just through physical spaces and connecting wires but also through neighbourhood and informal spaces as well. This interviewee spoke passionately about how his mother and family would like more access to electricity, and how they would prefer clean solar panels to polluting diesel. His understanding of what 'clean' energy meant was informed by his family's lived experience of the physical dirt, noise pollution and smells of diesel as well as notions of sustainability and climate.

While many refugees were positive about the role electricity played in their lives, some people also spoke of how a lack of electricity impacted on them. For example, the refugee quoted above contrasted the lack of electricity in his home, comparing his house with that of his neighbour who had access to electricity and to his school, which used power from diesel generators. He also expressed considerable sadness and even envy when talking about the levels of power available in schools and in the neighbour's home – wondering, 'what else is happening?' As the photos above show, many homes are surrounded by wires and energy technologies are often close by, despite some homes having very limited access to electricity.

Refugees also spoke to me about how solar and electricity technologies offered progressive opportunities and enabled them to connect with friends, family members and their communities. Before accessing solar

lanterns or solar home systems, for example, many refugee families had not been able to study or work at night and had been worried about moving around in the dark.

I prefer using the solar lighting energy because it gives good light. I have eight people in my family and they need it. It is helping my children doing their revision easily, and my business – I am doing everything clearly. Now I can find everything my client needs and I can charge my phone without paying any franc. We decided to buy a solar system because before the way of lighting was not powerful. I had to use non-rechargeable batteries and small bulbs like for torches connected with wires, but with a low lighting intensity. Now I have a television I watch, and sometimes some music or anything else I want to do. (Refugee living in Rwanda)

We do not have time for household conversations or cooking late when there is no light, because at 7pm it is completely dark. The children could not revise their lessons, or play before sleeping. Even I used to sleep at 7pm already because it was so dark but I wanted to sleep at 9pm or later. But now this is changed – thanks to the solars. There is a big difference between the solars [SHS] and the lanterns, but before when we had nothing it was so dark always. At night, thieves can move around, and you cannot see them because it is dark. If it was light, if there was the solar lights in the streets, then we could see them and tell their mama. I would tell her. And then there would be no more thieves. (Refugee living in Rwanda)

Throughout my visits, refugee families reported the practical importance of energy in terms of being able to access lighting and power in the evenings. Overall the results of discussions held in the camps suggest how the ‘social practices of energy’ (Hargreaves and Middlemiss 2020; Shove, Watson and Spurling 2015) are integrally linked to everyday practical and social connections and are shaped by community and family needs.

Energy for Social Life and Entertainment

The connection between energy and family was an important theme within energy use for many refugees. In the quotes below the interviewee suggests that increased levels of light have enabled her space to be used at night. This connection of pride, of happiness and of the extended values of connection was clear from many descriptions, and while the basic benefits of lighting – such as reducing spills and accidents – was mentioned, many interviewees continued to speak far more passionately about other, more social benefits of energy.

The light is on in the nights and my friends and brothers; they can come here and talk. They want to be together, to be talking and enjoying. I am

here and talking as long as the light lasts. It is not on all the time, sometimes I go home to my wife. But she is happy with the lights as more people come. I brought her new things and now she likes the lights a lot. She is very proud, very happy. About the success. It is much better than with the stick [burning sticks for light]. The light for us is a change. Now when things start to get better, it is because of the light. When there was dark, it was sometimes dirty, things would spill and accidents happen. The light stops that, the little lamps [gestures to the bulbs] they are all we need to see. Not making mistakes and spilling things is good, but the brothers coming at night is better. My wife has the new things and I have joy. With my brothers in the night, it is a very happy place. (Refugee living in Rwanda)

One particular social value of energy described by refugees in the camps in Kenya and Rwanda was for entertainment – satellite TV, watching the news and listening to music in the evenings. The quotes below highlight the importance of energy for entertainment in the camps. These quotes also suggest the cross-national cultural connections often present in energy exchanges.

My TV is worth having. I am paying a lot for the box and the connection, but I can have friends in the evening and then I can also watch the football if I like. The football is worth it, and then my wife goes to her sister's and they also have a TV, so we watch here and the women can be there, also relaxing ... but not with the football [laughs]. (Refugee living in Kenya)

One day soon I will buy a TV, I will have it. Maybe I will make another space like on the other hill. There you can go and watch the TV if [you] pay. The man there is running a good business. He will let you tell him what you want, you can pay and choose the movie. I like the American movies, but not when they make movies about Rwanda. They do not know Rwanda; this is a good country. They let me stay here, when I was only small; I did not die like the others [in Congo]. The Americans do not know that [that Rwanda is a good country]. I saw it many times on the television. I heard them, on the radio. They do not know really, about it all, about how good and safe it is here. You can make a life and become an entrepreneur. (Refugee living in Rwanda)

While few refugee homes had satellite TV installed, many accessed entertainment through their mobile phones. Basic phones as well as smartphones were used, as were headphones, batteries, chargers and extension cables. Batteries and connecting equipment for phones were everywhere and seen as essential items by refugees. Families used mobile phones as sources of entertainment – watching shows or videos clips on their phones – and playing music from phones was common. During my discussions in the camps refugees often mentioned how important having power



Figure 1.9. TVs and fan in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

to charge their mobile was, and the challenges of the phones breaking and having to get them repaired.

My phone is connected always, to the videos, to the TV shows. I charge my phone always, using the electric power. The solar energy can be very useful for that. So I use my friend's panel, this is good energy. I also prefer to go outside the camp. There it is safe and no one will steal my phone. If they do the police will come and they will be in trouble. Here I am risking it, we are brothers and sisters, so I cannot send them to the police. I will not lose my phone, it is all [gestures around the home]. It is connecting me to my fun. (Refugee living in Rwanda)

It is more expensive when it breaks, the boy has to go all the way to the town on his bike, or sometimes walk. It can take all day and we have to pay him. My sisters have accidents with the phones. The phone falls into the water, the children cause damage, it is all accidents. But they must be fixed. I need this phone for all the connections, to my friends, to ask for things, to take them things. (Refugee living in Rwanda)

Within discussions in the camps, energy access was seen as an important part of long-term settlement and an improved quality of life. Interviewees mentioned social status; the link between status and energy was clear in all the locations I visited: how those with more money were able to afford more access to electricity. This issue went beyond income levels. Access to electricity was also a signifier of people who had more power and influence – securing access to electricity, for example, by connecting to neighbours and businesses in the camps. Most of the refugee committee members and community leaders I met in the camps had electricity in their homes, and this was used as a demonstration of their position. These interviewees would often make a display of their appliances and energy products and make a show of boiling the kettle or switching on their solar home system to demonstrate it worked. Having power in this sense was both literal and figurative: it symbolised authority and wealth in homes and demonstrated clear differences in the social structure between some families and others. Often in humanitarian practitioner circles energy for refugees is only discussed in terms of access to basic lighting and cooking. However, as the examples in this section highlight, energy dynamics in refugee settings are highly diverse and underpin social life in camps. To fully understand the energy lives of refugees we must consider ‘the objects, technologies, and products of energy and understand how these technologies are embedded within social, political, and institutional networks’ (Rosenberg-Jansen 2022b: 9).



Figure 1.10. Solar charging shop: inside, with the appliances charging in Kigeme, Rwanda. © Sarah Rosenberg-Jansen.

Energy for Income and Saving

As well as its social value many refugees also described the importance of the economic value of energy, and often explicitly mentioned solar energy technologies as a way of reducing their spending. This is exemplified by the quotes below, which emerged during an interview with a refugee woman in Rwanda. She suggested that the cost of candles was an important reason for her buying a solar lantern, providing a detailed analysis of the costs and benefits of candles versus lanterns. She also linked the use of solar to reducing problems in the house: electricity and brighter sources of light could ensure that people can stay up later during the evenings, and would reduce worries about being in the dark.

Here in the house, I have a solar lantern, and it made such a big difference to our lives. I prefer using it to the candles, because candles are always expensive and you have to buy them all the time. It means you always need money in your pocket. Every evening we used at least one candle, sometimes more, so every day I had to buy a new one. They are 50 RWF [Rwandan francs] or more each. And sometimes one candle was not even enough. Every day I was worried about this. And thinking, will it be enough or will it be dark? But now I have light so much of the night, until I want to go to sleep. I never pay for light any more. I saved slowly and I bought it [the lantern]. The energy is free from the lamp! The sun charges the lantern for us. I can even charge the phone on the lantern, but I don't do that often as it reduces the light at night to 30 minutes. I charge at work instead. Or I pay 50 RWF to charge the phone in the shops in the camp. 50 RWF! It is so cheap, the cost of only one candle. I can afford all this now. Thanks to the solars. Before, I had one candle a day, and now I have so much more – all the energies I want. (Refugee living in Rwanda)

The value of energy in reducing costs for households was a dominant theme in the camps, with many people – especially in Rwanda – returning to the issue of cost savings again and again. The quotes highlight some of the nuanced understanding of this type of value and the costs associated with energy; in the longer interview the lady spent considerable time explaining how she had undertaken an analysis of her energy use. She explained to me that the candles were cheap and so she could afford to buy one every day, or a few per week, but she could not save money to buy lots of candles at once (and when she ran out of candles she had to live in the dark). Then her neighbour bought a solar lantern and told her the cost, so she lived without light from candles for a month to save and buy a lantern. After that she was able to save so much money from not buying candles she was able to buy a phone, and even pay for charging that when the power from the lantern was not enough for both lighting and phone charging. For this family this is a considerable cost saving, which means

they can spend money on other things. This interview highlights a number of priorities on energy and economic value – for example, in detailing the comparative costs of energy sources (such as solar home systems, lanterns and candles) the interviewee demonstrates a clear knowledge of energy-spending patterns. She identified savings both in terms of costs and time: more time is available in the evenings because of the light provided, and more money is available as money spent on energy ‘saved slowly’.

Walking through the camps the energy connections between refugee homes with local enterprises and businesses were very clear. In the quotes below a man in Kigeme in Rwanda discussed how energy can contribute to the economic life of the community. Social values are also clearly on display here, with the interviewee often mentioning the balance between creating a competitive business from which he earns money and being able to be supportive of his community. Interestingly, many of the small businesses in the camps are based within households, and many people have informal livelihoods associated with small businesses such as selling charcoal or running milk bars, hairdressers, tailors and restaurants.

It is my shop. I own the shop, the panels, all. I sell them the power, the repairs, it is a very good way to make money. I always have enough. When I serve a refugee like me, I try to maximise the money for them. If they pay, I fix everything, charge everything. I know they do not have a lot of money and for me they are my brothers and sisters. We all help each other; I just help with the electricity. From the solar, it comes from the solar, the panel, and the battery too. I use all the wires and some work better than others. The torches are good – they charge quickly. I only charge a small price and they can charge all day if they like. Once it [the phone or appliance] is full, it is full. Everything works and the shop is very popular. It is a good technology [the solar panel]. I got it from my friend. He found it, he put it with the battery because he knows how they work. Then I started the businesses. ‘Ha’, I said. ‘How clever!’ These people [gestures at UNHCR rep nearby], they don’t even know how to buy doughnuts. But I know. And I know about my solar, my business. I earn all the money and things I need. Me, I am not just an entrepreneur, I am the best. I am laughing, and happy. The panel, it helped me get happier, but I was always looking, always happy. (Refugee living in Rwanda)

Such quotes provide a clear example of the importance of energy in providing livelihoods and income within the camps. The interviewee linked owning the shop and the panels with the services he provides to the community (maximising the amount his fellow refugees get for their money). He also linked having energy with creating employment across the camp (he hired some of the young people in the camps to help him with tasks). He equated energy use with happiness and the joy he gets from having a successful business that provides energy, and that this livelihood is used to

support others within the camps. As this quote suggests, many conversations on energy started or meandered into other topics. During the course of our conversation he highlighted the differences in his knowledge – as a person directly connected to energy provision – with that of aid workers on energy systems.

The entrepreneurial spirit within the camps was evident throughout my research. Indeed, there were many other examples of homes and businesses that had either ‘found’ energy technologies and put them to use or had sought out specific technologies to make a business within their home. As these stories highlight, being able to earn money from selling energy has a value in itself, but this value is also linked to social and community connections. In these examples, energy is clearly about more than money. Having energy, being able to provide it as a service to the refugee community and earn income from it, was seen by many interviewees as benefiting both the business owners and the wider community through providing affordable access.

Sometimes I am buying a new battery. But most weeks I am taking [it] to the solar shop and the owner there is charging for me. That is good, and I am also connecting to the shop for other powers. For the lights, for the fan and the radio, that power is coming from there. This battery is for plugging, for putting in the phones and the other cables. This is good to have, but it is only a small power. Having the big power is better, then my shop is always with the lights on, and the customers are liking the radio and the phone. And the fridge! They are very much liking the fridge – the cold drinks are good, and it is making ice on the side, and the people – they are my customers – they are liking those cold things. (Refugee living in Kenya)

The selling and economic value of energy to households is closely connected to energy use by households and small businesses in the camps. Refugees connected economic value in terms of reducing costs and providing income but also linked these benefits to wider social and community benefits, suggesting that the value of energy goes well beyond monetary worth alone. There is considerably more to be said on the economic value of energy for refugees but I will return to this topic in the next chapter on energy uses in small businesses.

Unmet Needs: A Lack of Use and a Lack of Access

A lack of higher levels of energy access was something spoken about frequently during my research. While many of the interviewees had access to electricity, it was often the case that vulnerable groups within the camps had more limited access. For example, single mothers, poorer families and disabled people generally had less access than other groups. This issue was

particularly clear in cases of almost complete absence of electricity – for example, in the quote below when the interviewee noted how much easier life would be if the spaces close to her home were lit. In this case the interviewee focused on how her children would be able to use the space near her home at night if there was public streetlighting.

My children are playing here in the day, outside the houses. But at night, it is too dark in this area. We wanted a light here. We should have them here too. That would be good for the children, especially the older ones. They are using torches now, the small solar ones you charge in the day in the sun. But at night, if this space was lit, we could all be here – relaxing, playing and being outside without fear. Now we do not go outside in the right – the dogs could bite you or maybe there would be a snake. But in the light you would know, while in the dark you do not. The darkness makes us afraid, so we stay inside, still in the dark, but safer. (Refugee living in Rwanda)

This quote highlights how hard it can be to understand what an absence of energy means to people. Often people would express their desire for



Figure 1.11. View from behind households that do not have lighting in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

certain activities, such as entertaining at night or being able to watch TV, but very rarely would interviewees comment that they would like a certain product, such as a specific solar lantern or solar home system. In other words they would focus on what electricity would be used for. I found that long conversations about absent energy products were not easy to sustain, and many people seemed to feel uncomfortable talking about energy when they did not have access to it. As a result this was not a line of enquiry that I developed in detail during my research, as it felt unethical and intrusive to continue such conversations. However, there were often cases during interviews where people compared life 'before and after' electricity, which was useful for considering how energy is connected to quality of life. For example, some interviewees explained how life was better since they acquired access to solar power as they were able to spend less money on candles, torches and batteries, and had more money available to spend on other goods and services within the camps.

The first meaning of the title of this book, *Voices in the Dark*, refers to the literal darkness that many refugee families experience. Even in cases where households were able to afford technologies or services that offered a couple of hours of power each night, in many cases this would not last all evening and families reported having to go to sleep earlier than they wanted to as there was nothing to do in the dark. The implications of this are considerable: children could not study at night, businesses could not stay open and families were not able to enjoy time in the evening together. Often interviewees would express considerable sadness at the lack of electricity, highlighting elements of their lives that were upsetting because of a lack of access. In almost all cases this sadness linked energy with quality of life: people became emotional thinking about all the activities they could not do because they did not have access to higher levels of electricity.

While envy and sadness at a lack of energy access did not seem to be a major source of conflict within the camps, there were certainly examples of people being angry and frustrated by the limitations of life without electricity. Few incidents of physical violence or theft within homes and communities were discussed by refugee interviewees, but there was anger at humanitarian agencies and some reports of vandalism directed at community energy facilities such as streetlights. Active energy-related conflicts between the different populations in Kakuma seemed to be rare, although there were differing levels of energy access between communities. For example, Ethiopians and Somalis in Kakuma had considerably higher levels of energy than the South Sudanese and other residents (Rosenberg-Jansen, Njoki and Okello 2018). These differences were more likely to be caused by factors other than nationality – Ethiopians, for example, had been resident in the camp for a long period, whereas Sudanese communities were often more recent arrivals. However, these different levels

in quality of life and access to energy did not appear to be causing conflict within the camps, and, in many cases, communities were sharing or exchanging access to support one another.

Throughout this chapter we have explored what electricity and cooking mean to people: why they are important to refugees and how people living in refugee camps use energy resources. In many ways, energy use is the same as in the global north: electricity is used for lighting and powering appliances and fuels are used for cooking. However, the experience of using, finding, accessing and paying for energy is considerably different in refugee camps, where a lack of energy can be both life-threatening and radically reduce the standard of living – as described in the following conclusion.

Chapter Conclusion: Energy Connections in Refugee Homes

In the camps in Rwanda and Kenya energy clearly had a practical value associated with everyday use and the realities of needing energy products and services. But energy was also socially and culturally valued, with historical connections made by refugees linking energy use to their past and home countries. Energy represents more than access to many people, and is an important signifier of status and social standing. Solar energy, in particular, was valued for reducing costs and for supporting economic development. Refugees also spoke about the emotional importance of energy for them, in terms of feeling clean and for improving quality of life. Energy and social practice are inherently linked, and access to energy is not simply a technical or neutral issue. In this way having and using energy is about the politics of living: enjoying social and cultural activities, spending time with family and friends and being able to live a productive and fulfilling life. Energy has an important role to play in refugee communities, and underpins the ‘complex realities of the politics of life’ (Fassin 2007: 501).

One thing is clear from the voices of refugees on energy presented in this chapter: energy has a number of physical, social and economic values for households. For refugee households energy is perceived as essential in improving the daily conditions of living; value is centred on the usefulness of energy. Divisions and categorisations of energy – for example, separating cooking and electricity, or household and business energy use – are not evident within the daily realities of people’s lives in the camps: energy is mixed and connected. The usefulness and practical value of these energy products and services are fundamental to understanding the value of energy. Energy is not just valued as equipment or sources of power but

is thought of as a source of economic, social and emotional value. As the quote below from one interviewee suggests, energy is ‘all connected ... all together’. The way we write about and research energy should reflect this connectedness, listening directly to why people value it.

Yes, it is very good. I am using [energy] for free from the workers there [gestures behind], and I am using these to connect all the wires [gestures downwards to where connectors, invertors and extension cable are]. It means I can have light, the electric machines and other things. For my house I have the other system which does the lighting and electricals in there. It is all connected, all together, the house and shop electricals because in the day I am in the shop and in the evening, I am in the house with the light. Firewood for cooking as well. All the energy, all together. (Refugee living in Kenya)

Viewing energy as a social technology is fundamental to understanding the value of energy: power represents not just a single light bulb; it means being able to watch TV at night in a lit room with friends and family. In the same sense, energy is ‘non-technical’ in its importance: value is not expressed in kilowatt hours but in pride and happiness. The interconnectedness and mixed nature of energy is often non-linearly connected to the direct benefits of energy. For example, many of the interviewees appeared to segue into discussion of family life, their business or other topics of relaxation and income generation in the camps. These non-linear connections are a vital part of the value of energy, which lies ‘underneath’ many of the activities that we all value every day: making tea, using computers and phones, and being able to switch on the lights when it gets dark. This suggests that the value of energy for refugee households is one centred on quality of life: having more access enables a better quality of living.

Linking energy and the practices daily life was a dominant theme throughout my discussions with refugees in the camps. In the quotes below a refugee living in Rwanda associated improved energy access with improved living conditions, spending some time describing how energy was connected to his life – in his home, in the streets, in the markets. He commented, ‘when we talk about energy, we talk about life’ and ‘it is more than light’. On a practical level, access to lighting helps to open up homes and spaces in the evenings and prevent accidents such as falling or tripping in the dark or spilling food or water on clothes and bedding. On a social level energy enables social activities such as having visitors over for tea, enabling people to be proud of their homes. Having more access to higher levels of electricity enables a greater amount of light and access to technologies such as TVs and radios, but the social impact of electricity is also ‘more than light’. Electricity access is culturally and physically important, and feeds directly into feelings of happiness and security for many refugees.

I pay for this [the SHS]. I bought it for my family and for my community when they visit: it is more than light ... we use this room now. Once I had the lights, I knew I would stay here. This clock I bought from home [Burundi]; it shows me that time passes but it is also the same. Let us walk, I will show you where I am getting all the energy things. Sometimes I buy firewood from here, my wife buys, but mostly we have enough in the house and other people also cook for us so we do not use so much firewood. Now we are walking in the day and it is easy, but at night it would be better to have light here everywhere. Now I am bringing my torch when I need to come here at night, but it would be easy with this lighting [gestures to streetlight]. I am coming here for the barber [we pass by a solar hairdresser], and here for eating [a restaurant powered by a diesel gen-set in the market], and here for meetings [UNHCR and NGO offices, powered by diesel generators and grid connection]. So now you have seen everything, all the energy and all the places I am going. It is not like home but at least we have everything we need: all the energy. It was nice to walk and talk about these things with you: when we talk about energy, we talk about life. (Refugee living in Rwanda)

This interview highlighted the benefits of energy to families and communities. He suggested that his solar home system had really improved his family's quality of life by enabling them to use rooms in their house and feel like they could stay in the camp as their home. His reflection on the clock as an item of technology that enabled him to see that time passes while also feeling connected to the past was very moving and suggested a clear connection between the clock as an energy object and the emotional significance of his history. He viewed electricity as a basic good that the community needed, and one that was essential for them in building a good life in Rwanda – perhaps implying that surviving and fleeing conflict in Burundi could happen without electricity, but once he arrived in the camp he needed electricity to starting living again. While some of the residents also mentioned energy in connection to their home countries, this was much rarer in Kakuma. The interviewee above had relatively recently moved from Burundi, whereas many refugees in Kenya had been in the camp for most of their lives and had more distant memories of energy and life in other countries.

Elizabeth Shove's work on the social connections of energy is particularly relevant here. Shove, Watson and Spurling identified that infrastructures such as electricity systems 'constitute forms of materiality' that are 'typically connective, multiple', linking directly into the social practices of individuals and communities (2015: 285). As has been demonstrated within this chapter such linkages are also clearly present in refugee communities and the social practices of energy are realised through everyday life: through cooking food, travelling to gather firewood, having friends over in the evening to watch TV, playing and relaxing in public spaces in

the evenings and calling family on the phone. The materiality and practicality of energy quickly became evident during research as interviewees traced the routes by which they accessed energy and why it was important to them. In this way the social life of energy has become visible and the traditionally 'invisible' nature of domestic energy can be understood (Pink 2011: 117). Shove's work enables us to consider 'what is energy for?' (Shove and Walker 2014: 41). In the case of refugee communities I found that energy access is critical for quality of life: less energy means less access to many social and cultural connections, and more access enables community and familial relationships to thrive.

To conclude this chapter it is clear that the value of energy is closely connected to the practical and social importance of electricity in connecting families and friends, in providing status and signifiers of wealth, and in enhancing the happiness felt by families. Energy access within the camps is an important part of improving quality of life in terms of practical improvements in living standards (for example, avoiding snakes and accidents) but also in terms of culture and status. Ethnographic interview methods helped to open up these discussions within the camps and demonstrate the range of opinions on energy; indeed, these views and values were present across a range of people within the refugee communities, showing that energy knowledge within refugee households was substantial and diverse. But we also start to see the politics of living emerging – and, in particular, the potential impacts of a lack of energy access. Life without access to electricity and appliances is difficult and challenging, while life with energy is better.

Energy for Work and Businesses

Introduction to Energy for Refugee Enterprises

Standing in the middle of the road in one of the main markets in Kakuma, I gaze at numerous refugee shops and businesses rolling into one another along the street. Restaurants and cafés sell hot meals and snacks cooked over charcoal and firewood stoves, TVs blasting out the news as people eat, fridges whirring to keep drinks cold. Shops selling mobile phones, computer repairs, batteries, lights, solar panels and charging services sit side by side. Hairdressers use electric clippers, shops selling beauty products use soft lighting, sewing cooperatives and tailors operate electric sewing machines, and satellite dishes poke up from the rooftops of TV shops. Food sellers have freezers and chillers to ensure perishable food lasts for longer, flashing toys and small colourful torches attract children, and mobile money sales are everywhere. Motorbikes full of fuel weave across the road and the occasional car motors through the market.

Energy is to be found within every shop. Smaller businesses sell household goods such as bowls, cooking equipment, clothes and toys, but there are also lighting, power and electrical appliances to take mobile payments. Shopkeepers show me other goods they can order via their smartphones and connect to me on WhatsApp using Wi-Fi. In larger businesses, refugees sell mattresses, grain and food goods in bulk; computers and tills rack up bills and print out receipts. The whirl of machinery and buzz of electricity are constant. There is music jumping from radios and voices emerging distorted from phones on speaker. Within the hum of charging stations and batteries, the gleam of electric lighting and the soft warm breeze flowing from fans, motors work hard to keep things cool and provide power in the heat. The wind brings the smell of the diesel-burning generators which connect most of the market, while smoke from wood stoves wisps out of backrooms and yards. In trying to research how energy and refugee enterprises are connected, I wonder where to start.

Energy economies – living, vibrant, active spaces of commerce, trade, exchange and cash, surrounding and suppling energy – are present in the camps in both Rwanda and Kenya. In smaller camps, energy markets might consist of only a few shops or individual sellers, but in larger

camps – such as Kakuma – energy is big business. Some camps even have extensive mini-grids to supply grid-level electricity (Lahn, Grafham and Sparr 2016; Renewvia 2021). Whether the energy economies in the camps are larger- or smaller-scale, the importance of energy in the economic life of refugees is undeniable. Energy uses within the businesses and shops in Kakuma in Kenya are, of course, different to those in Rwanda – in Kigeme, Nyabiheke and Gihembe camps. But in both countries, and in many of the refugee camps and settlements I have visited, energy for running the businesses owned and operated by refugees is a critical need.

Refugee enterprises are some of the most visible energy users within energy communities in camps, but so too are their suppliers of energy: in many cases, refugee-led businesses are the main group supplying energy products and services to refugee communities (SNV 2021). Energy businesses are often run by entrepreneurs who have founded and built energy enterprises out of very little, having started by selling a few lanterns, cookstoves or energy products such as matches or pans. They have developed their businesses over time to supply electricity and cooking fuels, as well as products such as solar home systems (SHS) and energy services (Fell 2017). Many of these refugee energy enterprises are informal and independent, and more research is needed to develop a detailed understanding of energy uses within enterprises in camps (Rosenberg-Jansen 2022a). In this chapter I explore how energy is used for work and businesses in refugee camps, and evidence the importance of electricity and cooking resources for refugee-led enterprises.

Business Spaces of Energy and Energy Markets in Refugee Camps

Different Geographic and Economic Contexts: Energy Markets in Kenyan and Rwandan Camps

The geographic and economic contexts of the camps in Kenya and Rwanda are quite different. Geographically, Kakuma and Kalobeyei in Kenya are remote and are based in Turkana, far from the national business hubs of Nairobi and Mombasa. While in Rwanda the hilltop camps of Kigeme, Nyabiheke and Gihembe are close to local host communities and host smaller groups of people. In 2021 it was announced that Gihembe camp would be closed and many refugees living there would be moved to Mahama camp (Bahati 2021). Mahama offers a larger and more mixed community, mainly hosting refugees from Burundi and newer services as the camp has only been established since 2015 (UNHCR Rwanda 2016). Despite these differences there are substantial energy markets in all the camps. Kakuma, in particular, has a large system of informal trading and

is a vibrant marketplace: home to over 275,000 people, it hosts a multi-income community who have been economically dynamic since the camp's creation in 1992 (Betts et al. 2014; International Finance Corporation 2018; UNHCR 2024). The camps visited in Rwanda, however, have less established markets, are much smaller in size and are newer.

Kakuma camp in Kenya comprises four refugee sites (Kakuma I, II, III and IV) and close by lies Kalobeyei village, which is a settlement hosting both refugees and local host populations. All sites have multiple markets and business spaces, including micro-enterprises in homes, small shops and larger market streets woven throughout the camps. While many types of energy are present within Kakuma there are, in particular, many examples of renewable technologies, especially solar – from solar products being sold in the markets to training available on solar installation and maintenance, to solar panels producing electricity used to power businesses. The pictures below capture some examples of technologies and shops within the camps and show solar panels being sold in one of the shops in Kakuma, alongside electrical products such as solar home systems, torches, TVs and radios. As well as solar technologies there is also a range of additional objects that support solar panels and lanterns – including batteries, light bulbs, wires, connectors and electrical scissors. Solar panels sold in shops are often quite expensive and require upfront investment, but once purchased they can offer income opportunities and support the development of local businesses. For example, some businesses had created TV shops and cinemas powered by solar. Refugee entrepreneurs use solar to power a TV, fans and lighting for the cinema. The business owner then charges customers a small amount to watch a film or show (usually around £0.50). Businesses such as this use a considerable variety of energy technologies to power their activities.

Energy markets in the camps in Rwanda are somewhat different: many markets are at a nascent stage with a small number of shops spread out throughout homes and small markets. In all the Rwandan camps I visited there was a small main market street, usually with a cluster of five to ten shops close to the UN and NGO buildings. Some spaces had limited energy access and were often powered informally through connections with NGO offices or, in some cases, using small solar panels to supplement the energy needed for their businesses. While energy use by enterprises was less prominent in the Rwandan camps, there were still active markets, sellers and informal trading spaces throughout all the sites I visited. Figure 2.2 showcases the main market street in Nyabiheke, with some connections and wires running along the left of the street.

Markets were more active in the Mahama and Kigeme camps, which are larger in population than Gihembe and Nyabiheke. In Mahama, particularly, a large market space in the centre of the camp was a very



Figure 2.1. Electrical products such as batteries, torches, light bulbs and radios for sale in a shop in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

‘energy-intensive’ space, with loud music playing from every shop and multiple lights and power sources visible throughout the marketplace. After some investigation about why this was, it became clear that a refugee entrepreneur had managed to procure a diesel generator and was powering the market spaces using that. Despite some cases of limited energy access within businesses in the Rwandan camps, there were examples of mobile-charging businesses and shops selling electrical appliances such as individual solar lanterns and lighting products. For example, the picture below shows a standalone solar charging station being used as a small business to charge phones. Such small-scale businesses were common within households in Rwanda (Practical Action 2020). Sometimes these enterprises are referred to within the humanitarian energy sector as ‘micro-businesses’, and are often informal and based within households (Endev and Practical Action 2021).

In both countries there were also lively charcoal markets, exchange networks for firewood and fuel, and battery-charging businesses. Energy uses ranging from traditional and fossil-fuel-based technologies to innovative pay-as-you-go (PAYG) models and solar energy technologies. The importance of mobile charging – and the range of technologies, shops and energy sources via which to do this – was very visible across all the camps. In the pictures of solar charging equipment below the family were running a small business using the technology but were mainly focused on using the electricity for their own charging needs, whilst offering their neighbours the opportunity to use any additional power to charge their own items for a small fee. This type of micro-business was common, and local



Figure 2.2. Market street showing connecting wires on the left for some businesses in Nyabiheke, Rwanda. © Sarah Rosenberg-Jansen.



Figure 2.3. Solar-powered phone-charging technology in Nyabiheke, Rwanda. © Sarah Rosenberg-Jansen.

refugee-led enterprises are emerging quickly and progressively to meet the electricity needs of the refugee community.

Spaces in the camps often demonstrated mixed energy uses – with power being shared by workshops, meeting spaces and businesses. For example, in Nyabiheke in Rwanda I visited a ‘solar’ sewing shop, which was full of material, sewing needles, tape and manual sewing machines. There were also a couple of electric appliances – such as electric irons – and lighting in the space. Inside was also a cupboard full of mobile phones, which were charging. Energy use was mixed in this space, both because it was spread across a community facility (the sewing workshop) and enterprise space next door (a milk café) and also due to a mix of renewable and non-renewable uses. Energy-as-use was very important to the shop owners and customers. It was rare to meet a business owner who only wanted to talk about energy: almost all refugees interviewed detailed how energy was useful to them and the ways in which cheaper, and more reliable, energy sources and services helped their business. Enterprise energy use in these contexts can therefore be seen as embedded, connected and integrated with household and market users, and within spaces and communities.

Informal businesses and enterprises like this are sometimes recognised by camp authorities and implementing partners, but the role energy plays in businesses is largely unacknowledged by humanitarian organisations within camps. Despite this, the importance of energy for these enterprises – and the opportunities offered by electricity in particular – was widely recognised by refugees. One example was provided by the interviewee cited below, who had had a range of experiences working across UN agencies, NGOs and the private sector, and who described the dynamics of energy in enterprises within the camps:

There are markets within the camps, of course; they are selling energy products everywhere – from charcoal to the lanterns. Even home systems and the bigger panels for those who can afford them. The little ‘high-street markets’ are in the camps from the middle of the morning to the evening. Most people are using these for electricity somehow – for batteries, for phone charging, for buying lanterns. Some go outside the camps – in Kigeme where it [the local town] is close – because the prices are sometimes lower outside the camp than inside. (Refugee living in Rwanda)

You could call it an artisanal village or creative space, because everything is made locally, but, in some cases, people are selling things that you would consider so basic – like scraps of material or cold water – it is more necessary than craft. Energy is in there, of course, for chillers for water or powering the tools in the metal and repair workshops, but it is not the main thing. If you are asking someone: show me energy and businesses, they will not take you to these small spaces, only to the diesel generators and the solar shops. (Refugee living in Rwanda)

Markets within refugee camps are increasingly being analysed as part of an emerging body of literature on refugee economies (Betts et al. 2014), and some initial work has been undertaken on refugee businesses using energy (Rosenberg-Jansen 2019). However, very little is known in detail about the energy lives of refugee energy entrepreneurs and how they provide and sell energy within camps. Little is also known about the role of cash and flow of exchanges within camps on energy, and we can question: how do energy economies in the camps work and how do refugee businesses use energy?

Energy Business Uses: Users, Customers, Shops, Suppliers and Entrepreneurs

Two types of ‘energy business users’ can be broadly considered within the camps. Firstly, enterprises that *use* energy – for example, for lighting and powering their spaces, making products or transforming goods, or cooking food to sell – such as millers, sewing workshops and restaurants. These users of energy can be considered consumers or customers, who need energy to successfully run their businesses or develop their livelihoods. Businesses users often buy energy goods and services in local refugee-led markets in addition to the basic resources provided by humanitarian agencies, such as lanterns or firewood.

Secondly, businesses that *sell* energy – for example, shops selling solar lanterns, cookstoves or fuels; businesses selling phone and battery charging; and mini-grid or diesel generator owners who sell electricity. Of course, these businesses also use energy – often produced from solar panels, batteries or by making charcoal – but, importantly, they produce energy and are able to sell this to others within the camp. Businesses such as these are run by refugees who could be termed ‘energy entrepreneurs’ and are specifically focused on selling energy products and services. Refugee energy entrepreneurs in this context can be defined as refugee individuals or collectives who utilise energy products or services as a source of income and have built a business around the provision and supply of energy (including those selling energy products, power or fuel, mobile-phone charging, cinema and television services, and appliance shops selling lanterns, matches, cookstoves, panels and other energy-related goods).

Many of the businesses presented in this book, such as the solar cinema in Kalobeyi and the electrical stores in Kakuma, are examples of these types of energy-based enterprises, as are the mobile-phone-charging shops in the Rwandan camps. These shops are often selling electricity and access to appliances as a service, whether by charging for watching TV

and movies as in the case of the cinema or charging for power directly as in the case of phone shops. The distinction between businesses that *use* energy and those that actively *sell* it is important because the purpose of energy is different in each case. The first type of business relies on energy to produce or enhance what they are selling, whereas the second set of businesses are more directly focused on energy as a consumable: energy *is* the product or the service.

So many businesses are using energy really: some are using energy that is easy to get to – off-the-shelf products and services, and improving their business – to keep the lights on in the night or to offer cool drinks or a fan. And those businesses where really energy is the business – like phone charging. Where people can use solar home systems or other technologies as the business. It is some basic technologies, but they created a resource, a business out of this. It is incredible really, to make money, a job, a livelihood out of nothing, out of just supplying, because you know people need energy so much. (Refugee living in Rwanda)

Of course, you have you higher power uses, that's a different class of users, like carpentry and milling businesses – they need much more power. Sometimes they hook up or 'borrow' power from UNHCR or local generators. Sometimes they pay and sometimes they don't. People often have informal or flexible arrangements – it's like differential pricing for some people who are poorer sometimes and other times can afford to pay. In Kenya, some communities, like the Somalis, were very strict and never let people use power for free. In every space, every camp, every shop, every community, energy is different. Different uses, sources of energy but also different thinking about energy, electricity, cooking, fuels, firewood, shops, businesses, people. So much difference, yet the humanitarians think one energy-and-livelihoods project will fix it all. (Refugee living in Kenya)

Energy for Business Users and Cultural Connections

Across enterprise spaces in all the camps there were a large number of businesses using energy appliances and 'productive uses' of electricity, which are usually defined as those that involve 'the application of energy derived mainly from renewable resources to create goods and/or services either directly or indirectly for the production of income or value' (White 2002: 33). This traditionally includes uses of energy such as electricity for ice making, processing food, grain milling, textile making and weaving, battery charging, power for community centres and workshops, providing communication and internet services, carpentry, handicraft production, welding services and electrical appliances for some smallholder agriculture (Cabral, Barnes and Agarwal 2005). Many of these uses of energy are present within refugee settings, and there were some examples

of grain milling and primary and secondary small industries. However, within the camps in Rwanda and Kenya the majority of income-producing enterprises were tertiary ‘service’ businesses such as mobile-phone shops and hairdressers rather than primary or secondary production businesses involving raw materials, manufacturing or assembly. To date, analysis of productive uses of energy has largely been focused on urban and rural development settings and the connection between energy and livelihoods in refugee settings has only recently started to be considered (Rosenberg-Jansen 2018).

The dynamics and cultures of energy within enterprises varied within and between the camps. For example, in Kakuma there were a considerable number of businesses demonstrating innovation and entrepreneurship. As some authors have suggested, ‘Kakuma camp is a vibrant place, full of life, love, business, solidarity and creativity’ (Brankamp 2018: 1); however, many of the businesses there face hardship and challenges. Cultural and social dynamics are interwoven into entrepreneurship and energy use within reactions to these challenges. While there were fewer businesses within the camps in Rwanda there was still considerable trade and economic activity within the three camps. Refugees see starting their own business as a flexible way to earn an income, and energy access is a critical element in having a successful business.

In Kakuma, particularly, there was a vibrant energy economy and sets of markets and shops across all segments of the camp. Specific quarters of the camp had their own market, with most shopkeepers being of the ethnicity of that section of the camp – for example, the spaces close to the Ethiopian households host the ‘Ethiopian market’. While enterprise energy *use* is not dictated by nationality, some markets were using more energy than others – notably, the Somali market and the Ethiopian market. This may be as they are some of the longest-established market spaces and the refugees running these businesses have been resident in the camp for longer than newer arrivals. In Rwanda there were similar market spaces of energy, but these were often less clustered within the camps. In some parts of Kakuma and Mahama camps there were also privately owned generators selling power to businesses and entrepreneurs in the markets. Frequently these spaces of enterprise were informal, and mostly unregulated; however, they provide a key source of income for refugees who are able to start their own business.

In Kakuma, that is seen as one of the most positive things you can do is start your own business within the refugee camp. People see it as a necessity initially, because they need to feed their family and they need some income, and they need to start earning money to do stuff so they start their



Figure 2.4. A shop using M-PESA mobile money and strip lighting in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

own business to do that, or get a job. Or people start working in a restaurant and then start their own. It is like a seeing a culture of entrepreneurship, a very real and incredible buzz around markets and businesses. People have joy about having their own things to run and earn money from. (Refugee living in Kenya)

Within the camps business culture was an important feature of refugee life. ‘Cultures of energy enterprise’ – which includes national, social and political cultural connections to energy, as well as how cultures of energy entrepreneurship and energy service economies – were developing within refugee spaces. These cultures of enterprise were interwoven with improving quality of life for refugee families and businesses – and were linked to feelings both of nationality and of local needs. For example, there are many ‘milk bars’ (shops selling cold milk and chilled dairy goods) in the camps in Rwanda due to the popularity of fresh milk across the country (Muza and Thomas 2022).

There is already a thriving economic community there [in the camps], there is lots of contact with other people who are doing things the same – this means that people are inspired to start their own business. It’s beyond energy, it is exposure to other people doing the same thing – to business ideas and people. Lots of people all in the same space. People are inspired to start their own business. And feeling not just empowered, but that they want to do that. Like the milk bars, they are so popular and many people are using them, to sit together and rest and drink milk and be cool. (Refugee living in Rwanda)

The individual themselves is quite important, of course. Offering skills development and entrepreneur training helps. But it is really the flair and the uptake within the community. Finding people who are passionate and who can be the best champions for their business, and who know they need more and cheaper energy to do it, is critical. Of course, the business culture exists in Rwanda – people graduate from school, they want to create a business, this spills over into the refugee community. Refugees want to work in agriculture, in business, in shops, but need more energy to do it. (Refugee living in Rwanda)

Community and national characteristics were linked to energy businesses in very diverse ways. For instance, many people suggested examples of how they would support their neighbours and communities on energy. Shopkeepers would let people of the same nationality or cultural background buy energy products or services on credit and be paid later or in instalments but would ask customers of different nationalities to pay upfront. Flexibility seemed to be more common in the Rwandan camps, possibly as the communities there were smaller and many people had a



Figure 2.5. Milk-bar café and shop using solar power, Nyabiheke, Rwanda.
© Sarah Rosenberg-Jansen.

shared background after moving from similar areas within the Democratic Republic of the Congo (DRC). In Kakuma differences were more pronounced. There was a considerable sense of community support within national groups. For example, Ethiopian business owners were supportive of Ethiopians, and the same went for the Somalis, Congolese, South Sudanese and other groups within the camps. As I have argued elsewhere in the case of Kenya, ‘the cultural background, sense of community, and refugee’s own resources, all have influence on levels of energy access’ (Rosenberg-Jansen, Njoki and Okello 2018: 6). However, perhaps as there are fewer national groups within the Rwandan camps than in Kakuma, national connections appear to be less pronounced in the three Rwandan camps.

A sense of shared culture and national sentiment within the camps was varied and by no means uniform for every business, and this is not to suggest that energy exchanges are determined only by nationality. However, the issue of national connections was often introduced by interviewees – as in the example below, where it was suggested that buying certain solar products from an Ethiopian seller within the camp would be cheaper for people originally from Ethiopia.

This is our shop, for all the people who live close, for the Ethiopians. You can charge your phone here. I can charge anything, batteries, phones, anything. Come in and see. I charge around 100 phones a day, I think. Here are all the ones now – they are safe, that is why we have the metal outside [the metal grille on the window]: so that no-one can grab a phone or a battery. This is also my home [as well as a mobile-phone charging business]. On the roof I have a solar panel for the lighting in the home, and for the machines sometimes. But for the business I have the batteries, they are charging the phones. I have many batteries and when I need them to be full, I take them to the shop and the man there adds to them [another shop also run by Ethiopians within the Ethiopian market]. (Refugee living in Kenya)

These phones, these are the business phones, not my phones. The solar energy is only for my home and some lights here. It is not for the charging of these business phones. I used to use other things [shows outdoors, and there are disused generator parts and wires everywhere] but now it is cheaper and better to take the batteries to the shop and charge them there. Then I can talk to my friend who is running that shop and drink some good [Ethiopian] coffee. It is cheaper for Ethiopians, but maybe he will sell you one! (Refugee living in Kenya)

Throughout this exchange, the business owner constantly referenced Ethiopia – other shopkeepers with the same Ethiopian background as him, Ethiopian coffee and how his business serves Ethiopians that live in the surrounding section of the camp. This exchange did not feel exclusionary or prejudiced against other nationalities, but rather conveyed a sense of pride and connection to the community within which the shop was embedded.

During my research I found many examples of cultural and national dynamics linked to energy within the camps. While many relationships regarding energy within the business community seemed to be connected to people's sense of national community, there were also many other cultural and economic exchanges taking place. For example, within both Kakuma and the Rwandan camps it was common for interviewees to offer to introduce me to other successful business people, and there was clearly a community of connections between different energy businesses.

I have my business here, it is for charging using the batteries. I need two batteries. This one is here and the other one with my wife in the room [gestures to bedroom], she is listening to music and needs it now. Usually only one is on [the batteries]. Every three days I cycle one of the batteries to the town and charge it there. While it is there charging for the day, I use the other one. They are in a cycle like this, using one and then using the other. It is nice to have two. When I had one, I had to cycle to the town and back with the heavy battery both ways. Now I can cycle there, leave the battery and go back later. It is not so heavy like that. The battery is good for all types of



Figure 2.6. Mobile phones being charged inside a shop in Kakuma, Kenya.
© Sarah Rosenberg-Jansen.

things – phone charging, lighting, giving battery to other things. But mostly I am using it for the business. (Refugee living in Rwanda)

I do not pay exactly There is a shop, and it is selling cold drinks and some fried foods. It has a socket on the outside, and I plug the battery in there to charge. Then I go into the shop and buy a cold coke from the man, talk with him, have some brochette, and then when I leave I take the battery. He does not really know I am using the socket, he is drinking a lot and laughing with me while we are relaxing. I am relaxing in the shop, and the battery is relaxing too [laughs] – we are both getting juice! I like this man [the shop owner] but he is drinking banana juice [beer] a lot and he is not really knowing all the things. I am borrowing power from him, but buying the drinks, so he still gets money. (Refugee living in Rwanda)

Experiencing these cultures of energy led me to consider how energy communities were formed around energy businesses, which often seemed to be at the heart of energy exchanges across the camps. Energy businesses can be seen to support ‘the social life of energy’ (Hargreaves and Middlemiss 2020) by connecting the supply of technologies and services with communal and family needs. To date, most research on the social practices of energy has focused on households as a space of investigation (Shove and Walker 2014). However, my research suggests the importance of social exchanges within refugee energy businesses.

Just yesterday – I was talking to one of the men in the cinema about watching shows, and he said he only saw a television for the first time when coming to Rwanda. He said, ‘All things are more advanced here; in my mother country, people could not even find or know a television. Even me, I saw it for the first time when I reached here. That is how I knew it would be better here’. For people without electricity, it is so important – not just the power, but the TVs, the things, and it being part of this system. Being in Rwanda means more to them – more options, more energy, more chances – than at home in Congo; whether they are coming from the North Kivu or South Kivu [provinces], they have more here. (Refugee living in Rwanda)

Refugee businesses owners clearly commented on the value of energy – and, in particular, electricity – within their lives and livelihoods. For example, in the quote above where a refugee interviewee reflects on the difference electricity made in terms of cultural enrichment and entertainment value. The fact that many refugees were willing to pay for such services – like the cinema in this example – demonstrates the everyday importance of energy, and that energy services are a business opportunity for many refugees.



Figure 2.7. Cinema connections, supporting wires and sound system in Nyabiheke, Rwanda. © Sarah Rosenberg-Jansen.

Energy for Shops and Energy Suppliers: Refugee Energy Entrepreneurs

There are an incredible number of businesses in the camps using and supplying energy. This chapter can only provide a few examples, but considerable amounts of energy was being produced and sold in the camps. Most energy fuels and technologies that generate energy – such as diesel or solar panels – are produced outside of the camps and indeed outside of Rwanda and Kenya. However, these technologies are then used within the camps to supply electricity and power to refugee homes and businesses. To explore this further I use the terms ‘refugee energy suppliers’ and ‘refugee energy entrepreneurs’ to understand how refugees within camps are earning money and developing businesses from the selling of energy goods and services.

I am selling it [energy]: all the lights, the fan, the radio, showing people the phones are working and all the things with the phones that I am selling. It is my small space, but I am liking working here. I can sell everything and a lot of people want the phones, smartphones and high-end electronics as well. I saved for the lights [gestures to the green flashing fairy lights] and they pull the customers in. They say it is like Aladdin’s cave, so I will be Aladdin [laughs]. No-one is really buying them [solar home systems] from me, there are other shops selling those and they are buying there. I am a phones shop really, not for panels. But there are so many phone shops, we are all specialising and having our communities to sell to. I am very happy because all the people come here, not just Somalis but all the people who want special phones. I have power here, I am connected by the big generators in the market and I pay a lot, but the power is always on. I need that to keep the things cold so they will keep. I am having power but I am also selling power [points above my head to the solar torches]. They are good for the children and cheap for at night. My whole businesses is power ... I am power full! (Refugee living in Kenya)

Many of the enterprises using or providing energy in the camps are serviced-based businesses selling energy. In general, phone-charging shops were one of the most common examples of energy use across all the camps in Kenya and Rwanda. Almost every small collection of houses had at least one space selling power for charging, and in the larger camp markets there were many larger shops that offered charging. In particular, solar energy was often used to charge mobile phones. Alongside these phone-charging shops, TV-watching shops and cinemas, businesses provided cultural connections such as restaurants selling Ethiopian food, Somali snacks or Kenyan mandazis. Energy had a clear role to play in enabling these entertainment and restaurant businesses to provide culturally specific services – whether through playing Somali shows, Ethiopian music or providing national food.

I am selling all the electricity and energy things: lamps, lanterns, solar panels, batteries, torches, and locks to keep things safe. I also sell these [points to scarf and lipstick] if you like something. They are for the ladies, of course. The [solar] panels are expensive; they are displaying to show what is there but few people buy. Maybe people buy the batteries – these small [pulls out AA-type batteries] and these big [points to car battery]. I also have light for the lights [points towards ceiling light, which was used to power the shop]. Mostly they [customers] are buying direct, no loan. I am selling here for some time. It is good business and I make good money to support my family. (Refugee living in Kenya)

There are so many copycat businesses: one guy sets up a little phone shop and then there are suddenly ten more of them. Other people see him using a battery to charge phones, and they copy that – suddenly everyone is charging 100 Francs to charge your phone and the market – a self-regulating market – is there. (Refugee worker living in Rwanda)

The value chains and exchange mechanisms within the camps was astonishing. Lots of people in Kakuma had come from towns or cities with more developed urban services and businesses in their home countries, where selling power was more common than in rural areas. However, in all the camps energy entrepreneurship felt as if it was developing quickly and as a key form of livelihood.

Yes, there is a clear energy value chain here, it's much easier to trace in Rwanda than other places because the country is so open and transparent, at least I think so. The productive use element, for example – if you ask people why renewable electricity is important, is it not just about lighting, people have clear ideas on business models and energy businesses. They understand why suppliers are important. It goes much beyond energy for free and is starting to develop a real potential for a system there. It is a whole energy economy, really. People are moving away from traditional livelihoods such as farming and agriculture, to the energy services world for income. Phone charging shops, selling batteries, selling time to cycle to places to recharge batteries, selling power – these are now real livelihoods in the camps. They are not normally recognised as energy, because development people class them as 'livelihoods', but what is underpinning them is energy. (Practitioner living in Rwanda)

The economic value of energy for enterprises is not just expressed in a monetary figure but is also demonstrated through the creation of energy markets and services within the camps. Even in emergencies or for newly arrived refugees, who often face extreme resource and income scarcity, energy businesses are some of the first to be set up. Whether this is from solar lanterns sold for households to be able to use lighting at night or from larger power sources, such as informal mini-grid electricity connections,



Figure 2.8. Signs for computers and mobile-phone repairs in Kakuma, Kenya.
© Sarah Rosenberg-Jansen.

refugees were buying energy products directly from within the community to make their lives easier, enjoy social activities and to be able to be more productive. This finding reinforces the idea that improving energy access is often about improving quality of life. In this case the services providing quality of life are being offered by the refugee community (in the form of refugee-owned energy businesses), and are inherently connected to other issues such as education and community collaborations.

Oh, there are lots, some are my friends, and the friends of my wife ... But often they [customers] are coming to leave the phone of their mama here. It is their job from the mama – they have to find the cheapest place to charge the phone and then they can spend the rest of the money on something for them. Often they come here, because if they are watching in the cinema, I let them charge the phone for free. It helps to get business from the boys, and I have enough money for the phones. We are a cooperative, like the milk bars, but with energy, batteries and cinema watching. And I am also telling the boys – you must be good boys for mama, doing their jobs for her and going to school. Education is very good, you can learn English and French and have a business like me. Because many of the boys just want to watch

cinema and not go to school, but my friend [the cinema manager] and I are telling them – without school, no phones and no cinema. Soon they will see, the youngest boys, the school is the best thing and they will want to keep going. (Refugee living in Rwanda)

In particular, many young people within the camps were highly engaged in energy and were actively contributing to the energy life of the camps. Interviewees often highlighted the formal and informal role of young people in the energy enterprises chain: as users, repairers and sellers of energy. In Kakuma there were also dedicated NGOs providing energy training within school and education programmes, especially livelihood training programmes to support the development of enterprises within the camps. Many young people had access to mobile phones, and in some cases internet access, and energy technologies were highly valued regarding what they could offer in terms of future development, job prospects and opportunities for income.

There are so many young people in the camps, especially in Nyabiheke, it's nearly 3,000 people [young, working-age people]. They are all involved in businesses that need energy – they sell the beer, make things and materials, they have machines for hair cutting, some are in agriculture, and some have shops. All need the energy to do this. Some have renewables to help them. (Refugee living in Rwanda)

I want electricity as my career. I also know solar: solar outside and the connections inside. I know it, how it works. There are many types ... polycrystalline is 80 watts, for example, and I can show you how to wire everything. We train 8am to 4pm on Friday and longer on other days. I am having an electrical focus, on repair, maintenance and building connections. On Friday we also have sports in the morning as part of community bonding and being together. I did the electricals class first, as I want electricity as my career. I will use [it] to power things and fix things, and make my own business. I am twenty now and I had two years of electricals training and English lessons here, and that was very good. I was almost ready to start my business. But then I realised I could not use the computer for all the administration for the business. For fundraising, for printing business cards, for doing receipts. I will do repairs and work for the UNHCR here, but my business will be independent and I will need receipts to give them. Then I am here in [the] computer class for one more year, and I am learning all the final things I will need for my business. (Refugee living in Kenya)

The businesses creating and engaging with cultures of enterprise represent a core constituent of energy communities in refugee camps. Ben Campbell, Jon Cloke and Ed Brown suggest that 'households and communities have become spatially and relationally more fluid, more flexible' (2016: 133). This is certainly true of refugee energy communities,

as businesses and households connect together in a multitude of ways to supply energy resources within refugee camps – with many interviewees outlining how their businesses, families and futures were connected.

I will be a solar power installer and maintainer. Then, once that business does well, in four to five years I will also have a micro-finance system and I will make small loans to people, only reliable people who have been saving, and I will help them buy and rent the solar systems from me. I will do all the repairs and maintaining myself at the start, because it is a one-man business and I am that one man. I have the knowledge to keep the system running. But then I will grow the business and I will hire people to work for me, like an entrepreneur. I have a typed business plan, which the electricals teacher helped me make [gets the plan from his bag] and I typed it here in the computer class. Electricity is very important – people need it in their homes and I will be the one supplying it. I have already done it with my home for my mother and my aunt's house close by, they are having solar panels for two years now. No problems, I clean, I fix, I install, I manage and I pay the shop I bought from in the market in small amounts when we can afford [to]. When I started my plan – my business plan, to become an entrepreneur using solar electricals – I went to the market, to the solar shop, and I talked with the man who owns it. I said, 'I can bring you twenty new customers a year easily, but they are needing help knowing about solar electricals, and they must pay in very small pieces'. I like that a lot and it connects to the internet, which means I can read a lot of things about being an entrepreneur. I am reading Forbes website often and it is teaching me a lot of new words about being an entrepreneur, like showcasing – I am showcasing my business all the time – at the shop, and on my aunt's home, and even talking to you right now. When you get home, you will say, 'He will be famous, my friend the solar entrepreneur, perhaps not very rich very soon, but he has a plan' [laughs loudly and high-fives his friend]. Maybe I will even call my business 'showcasing solar' as it sounds nice! (Refugee living in Kenya)

As well as refugee energy entrepreneurs who were selling energy within the camps, there were also examples of private companies and international private-sector suppliers selling energy services. In Kakuma there were a range of suppliers, with companies such as M-Kopa, d.light and BBOX selling their products and services in the camp. The market for such services in Kakuma seems to be relatively well developed, with the average household estimated to spend around \$9 a month on lighting, phone charging and cooking in Kakuma I (Corbyn and Vianello 2018: 5). While this might not seem a very high amount to pay for energy, in some cases this represents around 30 per cent of people's disposable income and is cited as a priority spending area for most families (Ibid.).

In Rwanda a similar market for solar home systems (SHS) based on PAYG and leasing models is emerging. Some providers such as Zola,



Figure 2.9. ‘Solar panels warehouse’ supplying shops in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

BBOX and Mobisol are already selling products and services to consumers within camps. The products offered by these companies differ slightly – for example, some have bigger solar panels, more lights or additional appliances available (BBOX 2018; Mobisol 2018; OFFGrid Electric 2018). Most SHSs are primarily bought through a PAYG system, with a deposit ranging from around £12 to £45 and monthly repayments of £5 to £15, dependent on the type of system, over around 36 months (Practical Action 2020). This type of model makes solar home systems more affordable, as they can spread the payments for energy over a number of months or years. Within refugee camps vibrant, small-scale energy economies already exist – as this chapter has demonstrated through the many examples highlighted of shops selling energy products and services within the camps.

Chapter Conclusion: The Businesses of Energy and Essential Enterprises

Energy in enterprises can be seen as flowing across spaces, connecting households and businesses. The usefulness of energy products and

services is valued above the technology itself, and cultures of energy enterprise exist within refugee spaces. The importance of energy was not just expressed as cost and its monetary value but was inherent in the creation and existence of energy exchanges in the camps. The overarching story of energy economies in refugee camps is an intricate one, involving multiple parties, businesses, cash and trade exchanges, as well as various technologies, business models and connections.

Energy markets and the development of livelihoods are interdependent, and the cultures of entrepreneurship witnessed within the camps are underwritten by energy. The experience of collecting data and analysing the energy life of refugee businesses was characterised by one of seriousness and independence, with many refugees willing to talk for hours about the energy uses of their business and how they secured electricity themselves. For families and enterprises who can afford energy services (such as a connection to a refugee-owned mini-grid), energy transformed their quality of their lives and enabled entrepreneurial activities. In this chapter, I have presented a positive account of the types of energy business within the camps. However, it should be noted that energy access is still limited in these spaces and many families and enterprises face a daily struggle to access it. To ensure a high-energy future for all, a mix of solutions and support for energy access will be required (Mutiso 2019) – one that engages with local refugee-led economies as well as external private-sector solutions and market investments.

The majority of people living in camps do not necessarily have stable or regular incomes. However, there is substantial evidence that many camps are functioning in a similar way to towns and cities, and have large informal economies (De Montclos and Kagwanja 2000) – and that camps act as economic hubs for local economies (Jacobsen 2005). Some authors have written in recent years about refugee economies and refugee livelihoods (Betts 2021; Easton-Calabria 2022). Despite detailed analysis of the economic lives of refugees, especially in relation to cash–food dynamics (Alloush et al. 2017), energy is often missed from this story.

There are so many value chains there in the camps. The markets, the local markets, they are creating value and added value for the people there. In Kakuma, for example, so many people [are] making a lot of money out of diesel generators, and selling electricity from them, selling services, connections, maintenance, and light bulbs. They are selling everything in the electricity chain. (Refugee living in Rwanda)

Payment for energy products and services interacts with the cash economies of refugee camps. The concept of energy economies may be useful here: an energy economy of a camp can be understood to include the markets, businesses and households involved in the provision, sale and

use of energy products and services within that refugee camp, as well as trade that goes beyond the camp to include exchanges with the host community and local, national and regional businesses. A key element of refugee energy economies are the markets for energy, which are the physical and virtual spaces where goods, resources and currency change hands, exchanging money for energy products and services. To some extent during my research the terms ‘markets’ and ‘economies’ were used interchangeably by interviewees. However, in the discussion in this section the term ‘market’ normally refers to the physical and virtual spaces of exchange whereas ‘energy economies’ is used as an overarching term, which includes market interactions and the results and impacts of these exchanges. In a traditional sense economic exchanges on energy are usually centred on income and spending, and the role of cash was often central to how energy markets in the camps were working.

But you need a cash system to make renewable energy for business work – in Rwanda, in Kenya, you have this! But there needs to be a bit of a money-movement economy in the camp. In most of the Rwandan camps, there [is]. It is not a lot of money, but people often use cash first to pay for energy. If you have money you have everything. If we have money, then no problem – the refugees can get energy. (Refugee living in Rwanda)

Markets, and the free movement of cash, were critical in these exchanges. As the quotes above suggest, there is a clear link between energy services and the ability to pay for goods and services – ‘money-movement’ – and payment for energy was a critical part of the economies of the camps. In the case of Kakuma it was clear that more money was available and higher spending levels were possible than in the camps in Rwanda. There are likely to be many reasons for these differences in cash flows and disposable incomes, but the impact on electricity within the camps was clear: more money means more energy. Interviewees frequently commented on this and explicitly linked their jobs and incomes to the amount they spent on energy. For example, one entrepreneur refugee living in Kenya whom I interviewed spent a considerable amount of time during the interview explaining the dynamics of how he transferred money for his business and the mobile payment systems he used. When I asked how his description was connected to electricity he said: ‘Without energy I cannot make the cash move, make it flow, transfer it. But without cash I can’t buy the energy. Now I have both and I make it go round and round: energy, money, business – they go together’.

There is a limited body of literature analysing how energy, cash and livelihoods connect. What policy analysis there is often focuses on the role of electronic transfers (Bailey 2017), mobile money (GSMA – Global System for Mobile Communications Association 2017) or the role of

technology in general for humanitarian logistics and cash transfers (Tatham and Christopher 2014). In some cases research has considered the role of electronic transfers in developing financial inclusion and reaching marginalised groups (Willis and Murray 2016) or the user experiences of cash-transfer appliances and technologies (Ground Truth Solutions 2018). However, this work rarely examines the direct role that access to energy plays in delivering humanitarian cash solutions. The provision of cash by humanitarian providers is only one source of income in the Kenyan and Rwandan refugee camps: informal economies exist in all camps (Rogers and Bloom 2016), and energy plays a large role in these exchanges.

The connections between the economic value of energy and markets in refugee camps are full of complexity: involving multifaceted exchanges of cash, trade and bargaining as well as different technologies and levels of energy access. These markets form part of whole energy economies in and around camps, and highlight the fact that energy markets develop organically and emerge directly from the needs of refugees. The flows of cash and levels of specialisation within the camps suggest that buying energy products and services is important for this community. These cash flows in refugee camps indicate the extent to which people value certain goods.

In conclusion, as evidenced throughout the stories in this chapter, markets for energy are thriving and entrepreneurs have been able to specialise their services and products in order to meet the needs of multiple energy customers. These businesses are supplying services and products that enable refugees to improve their quality of living. These themes of energy services, quality goods and the specialisation of energy products demonstrate the diversity of energy uses in enterprises within the camps. Energy has inherent economic value *and* helps to create both economic and social value through the sale of products and services, facilitating quality of life within the camps. In summary, energy is connected to conceptions of economic value and cultures of energy enterprise that are linked explicitly to social, national and cultural dimensions. In refugee businesses, therefore, energy use was considerable. However, when we turn to public and community spaces within the camps a different picture emerges – as we shall explore in the next chapter.

Energy for Public Spaces and Humanitarian Operations

Introduction to Energy in Public and Operational Spaces

During my visits to refugee camps I was often surprised to see schools and hospitals without energy. Community centres and spaces such as churches and mosques experienced frequent power outages or could only access power at certain times of the day. It was often shocking to hear stories from teachers, doctors and refugee leaders about how they managed without electricity in public spaces – many describing how they would ‘borrow’ power from people with diesel generators, or ask their students to study at night next to the compounds of humanitarian staff as these spaces had streetlighting. The lanes and streets between refugee homes were dark at night, and even wash stations and toilet blocks were without lighting.

As well as dark schools and hospitals without power, I also sometimes witnessed operational spaces that were ‘over-powered’. For example, in one of the UNHCR offices I visited the doors and windows were left open despite the air-conditioning being on. When I questioned why this was, as it represented an inefficient use of energy, the office manager responded that they didn’t know how to turn off the cooling system and so left the door open to the outside so the room didn’t get too cold. Humanitarian offices and compounds would buzz with electricity and the hum of electrical devices. Staff accommodation had Wi-Fi and charging points in every room, and advanced technologies such as fingerprint scanners and biometric testing devices were used to support the administrative processes of humanitarianism.

The contrast between these two pictures was extreme: public spaces without any access to energy while humanitarian operations were frequently fully electrified. This difference reflects the confusion and chaos of humanitarian response, as systematic energy planning did not seem to be taking place. During interviews energy divides in refugee camps were frequently dismissed as the result of limited budgets and the challenges humanitarians face on a day-to-day basis. However, you would be unlikely

to find a set of government offices with power in a city in the global north only for the hospital next door to be without power – both as this would be seen as unacceptable and also because planning processes would have considered the energy needs of all users in a location and not developed arbitrary boundaries based on the status of energy users, as is common in refugee camps.

Refugee communities expressed their anger and frustration that basic services – such as public streetlighting, and power in refugee centres – were not provided. Interviewees would often take me to spaces without power and offer a guided tour of locations in the camps that had either no power or very limited access to it. I was also stunned by the lack of knowledge and engagement with public energy systems by humanitarian staff members. Many humanitarians interviewed dismissed the topic as ‘just the lights’, questioning why a researcher would be interested in the electricity and cooking systems within the camps. In fact many staff members and practitioners did not seem to have considered the importance of energy access at all. Energy access for humanitarian operations and public spaces faced a number of additional challenges. Remote camps in the desert of north-west Kenya and on the hilltops of Rwanda are far from capital cities, and the infrastructure of the national grid often did not reach them. As a result many of the camps relied on off-grid and micro-grid infrastructures. Standalone systems that were locally owned and operated were often powered by diesel and had limited repair and maintenance plans. These systems often functioned independently of national or formal energy systems, which contributed to additional complexity as each system was unique and it was difficult to establish how energy was supplied overall.

The previous chapters considered energy for homes and refugee businesses, but we now turn to the energy needed in public spaces – schools, hospitals, refugee community spaces – and the energy required for humanitarian operations – for the offices, compounds and spaces of humanitarian response. Within these descriptions, the lack of knowledge of humanitarian staff on energy is described in order to critique and reflect on the literal darkness and lack of power in public spaces.

Community Facilities and Operational Spaces of Energy

Public Users of Energy in Refugee Camps

Within refugee camps there are multiple users of energy in operational and community facility spaces. Energy for operational uses such as water pumping, offices and compounds was viewed as ‘essential’ within refugee camps. In fact, in terms of the amount of energy used – including

both consumption of kilowatt hours and the high consumption of fuels – humanitarian institutions and organisations currently use more energy than refugee households and businesses (GPA 2022; Tunge and Whitehouse 2020).”publisher”.”Global Platform for Action (GPA. This is in part because limited energy is provided for households and businesses, and so these spaces are underserved, but also because of the scale of energy needs in public spaces. For example, hospitals, schools and offices are substantial consumers of energy. Within large-scale users of energy two main energy uses were identified:

- *Energy for community facilities*, which provides the energy needed to meet the community needs of refugees and host communities – including power for health clinics, schools, playgrounds, public spaces, refugee community halls, churches and religious buildings.
- *Energy for humanitarian operations*, which provides the energy needed for humanitarian services, covering energy use in humanitarian offices, living spaces, NGO offices and implementing organisations, as well as electricity use at food and water distribution points and in refugee-registration or administration spaces.

In both types of spaces fossil fuels and diesel generators were commonly used. To some extent, new investments in Kakuma and the Rwandan camps have used solar and hybrid technologies (Practical Action 2021; Renewvia 2021)2021; Renewvia, 2021. While some public space lighting used solar streetlighting the majority of community facilities that were electrified accessed power using a grid or micro-grid connection, and in recent years some of the camps have started to move to solar-powered generation. Table 3.1 summarises the different public users of energy, the common technologies observed in refugee camps in Rwanda and Kenya and who provides energy. Critically, the table highlights that humanitarian organisations are responsible for securing their own energy, and in many cases also provide access to NGOs and community facilities.

Often sector specialists used the two terms ‘community facilities’ and ‘operational uses’ interchangeably, and in terms of the practicalities of use in these spaces energy flows between and across users. However, the reality of humanitarian systems means that energy for humanitarian operations (the homes and offices of UN staff, for example) is prioritised over energy for refugee community needs. In practice this division also leads to the energy needs of community facilities being neglected and ‘playing second fiddle’ to those of operational users. This is reflected in the evidence presented in this chapter as many community facilities were unelectrified while operational users were almost always connected to some form

Table 3.1. Operational and public energy users and provision mechanisms commonly observed in refugee camps in Kenya and Rwanda. © Sarah Rosenberg-Jansen.

Energy Users	Examples of Spaces	Common Technologies	Typical Energy Options for Provision
<i>Community Facilities</i>	<p>Health clinics and centres. Playgrounds and nurseries. Educational spaces and schools. Public spaces – streets, open spaces, walkways. Refugee community spaces – halls, churches, other buildings. Market high streets.</p>	<ul style="list-style-type: none"> • Diesel power and generators. • Mini-grid systems or grid connections. • Occasional solar panels for building lighting or power. • Solar or hybrid mini-grids for some clinics and public spaces. • Limited energy technologies present, or technologies broken or damaged. 	<ul style="list-style-type: none"> • NGO or humanitarian organisation buys diesel generator. • NGO pays humanitarian organisation energy bill for diesel or electricity. • Development or humanitarian programme installs solar or sustainable energy, and often provides energy for free or at a subsidised rate. • Informal acquisition or connection to humanitarian agency power sources. • Refugee community or committees buy independent technology for power. • Very limited energy provided.
<i>Humanitarian Operations</i>	<p>UNHCR offices and living spaces. NGO or implementing partner office spaces. Registration or refugee administration spaces. Food and water distribution points.</p>	<ul style="list-style-type: none"> • Diesel power and generators. • Mini-grid systems or grid connections. • Some new solar or hybrid mini-grids proposed in Rwanda and Kenya. • Some examples of technologies not working or temporarily out of fuel. 	<ul style="list-style-type: none"> • Humanitarian organisation buys diesel generator. • Humanitarian organisation pays energy bill for grid energy. • Development or humanitarian programme installs new solar or sustainable energy, and often provides energy for free or at a subsidised rate.
<i>Mixed Users</i>	<p>Water pumping. NGO offices. Public space used by refugee committees.</p>	<ul style="list-style-type: none"> • Diesel power. • Occasional solar panels for building lighting or power. • Limited energy technologies present. 	<ul style="list-style-type: none"> • Sometimes generator owned by humanitarian agency but fuel paid for by NGO. • Sometimes classed as operational energy but paid for from community facilities – for example, refugee committee spaces. • Often not clear who owns, pays for or maintains energy.

of electricity, even when access was intermittent or technologies were in need of repair.

The range of electricity sources, from both renewables and fossil fuels, was similar in both Kenya and Rwanda – with a strong prevalence in both countries of solar technologies as the predominant form of renewables visible. To some extent new technologies have been installed recently by the Renewable Energy for Refugees (RE4R) programme in Rwandan camps, with 185 streetlights installed across three of the camps between 2019 and 2021 (Practical Action 2021)2021. However, only time will tell if these will be maintained and continue to provide services for the camp communities. Within public spaces in the camps there was a focus on electrical technologies for power rather than cooking. This is in part because many of the uses of energy – public space lighting, power for offices, connections for Wi-Fi, etc – are electrical. But it is also a function of the fact that relatively little cooking was done within community facilities and operational spaces. An exception to this was community cooking done within schools, which often used firewood and charcoal, and cooking within office kitchens, which relied on either LPG canisters or electrical cooking appliances such as microwaves, kettles or electric hobs.

Physical Spaces of Public and Organisational Energy in Refugee Camps

A diverse picture emerges from fieldwork in Kenya and Rwanda, with examples of some community facilities being completely electrified, others exhibiting an absence of energy and a third category of energy access whereby facilities were connected but power was highly intermittent due to a lack of repair or power rationing. Spaces of energy use in community facilities across the camps were varied, although in all the camps I visited there were sites for schools, playgrounds, community centres, health clinics and water-pumping stations. In some cases these spaces were electrified. For example, most of the health centres in Kenya and Rwanda had access to electricity – but this supply was often intermittent.

Without regular power refugee community members felt let down by humanitarian organisations. Interviewees commented that the lack of lighting and power in public spaces was one of their top requests during discussions with aid agencies, but little was being done to meet this need. Some refugees mentioned accidents that happened in the dark because of a lack of public lighting, especially for women who needed to go to the hospital in the night to give birth and accidents where people would fall on the way to the toilet blocks in the dark. While several previous projects to install public lighting and power to community facilities had taken place, these projects were dependent on donor funding and, as one

interviewee – a refugee living in Kenya – commented, ‘when the money ended, so did the lights’. A lack of reliable power, especially in health clinics, caused a great deal of anger in the camps.

Community facilities were often reliant on energy provided for humanitarian operations – for example, through informal connections to UNHCR and NGO generators. While in some spaces energy would be provided and an organisation would take the lead on energising a space, there was little systematic provision of energy – which left many spaces in the dark. For example, clinics and offices were often powered whereas playgrounds and community centres were not. In contrast, by and large all operational institutional spaces in the camps visited in Rwanda and Kenya had access to electricity. This included power for the offices for agencies, NGOs and implementing partners, as well as food and water distribution points, registration and administration spaces, and staff living quarters and compounds. A couple of examples are presented below to provide a snapshot of operational energy sources in the camps.

We are big energy users ... Mission-critical situations, so key support people within the camp – the community leaders, the staff from Save the Children, or the staff from [the] Red Cross, whoever are out there, who really need to have energy and mobile communications and to be able to keep systems going, that’s kind of the target that we are looking at ... when you have this mission-critical concept. (Humanitarian energy practitioner living in Kenya)

In Kenya energy technologies and appliances within operations were prominent in institutional spaces. Similar spaces were found in WFP compounds and the office spaces of NGOs and implementing partners working in the camps. As Kakuma is far from other national supply routes much of the power for these sites was supplied by diesel generation, with a few examples of small-scale solar panels observed on individual buildings. The Kenyan national authorities were planning to connect Kakuma town, the humanitarian operations and the organisations within the camps to the national grid via a locally placed, nationally owned mini-grid. Even with these promised connections, the national electricity network was not intended to power households: grid-equivalent power was planned only for the camp operations, some market spaces, hospitals and clinics. While refugees living in the camps may in the future be able to benefit from the electricity by using the electrified services in the schools, hospitals and camp administration facilities, they may not receive direct connection in their homes via these systems and so would still be reliant on smaller and independently owned energy technologies.

In Kakuma most of the public community facilities within the camps had power and lighting. For example, schools and clinics were electrified and some NGO spaces contained cooking facilities for students. One of

the key examples of energy at the community level was the provision streetlighting (EDP 2018). There were also some examples of public lighting in Kakuma and Kalobeyei settlements from lights powered by mini-grids outside the market shops, community spaces such as schools and clinics, or from the power from the institutional spaces such as offices and securitised food-distribution points. Within public spaces in the camps less energy (for example, for playgrounds or refugee community spaces) was observed, but many market spaces were electrified through informal diesel generators or streetlights.

In Rwanda public power connection was different in each of the three camps. Kigeme camp, in the south of the country, was connected to the national grid. This power was only used by humanitarian operations, healthcare providers and a few NGOs within the camp. Gihembe in the north, close to the town of Gicumbi, was partially connected to the grid for some host community services, but the majority of humanitarian users had diesel generators for their operations. Nyabiheke was the most remote camp, being over an hour's drive from the local host town and field office, located up a particularly steep hill and in difficult terrain. While the Rwandan national offices at the bottom of this hill were connected to the national grid, the camp operations relied on diesel generators for their power needs.

Public space lighting in the Rwandan camps was highlighted by many community members as a particular problem: the camps were very dark after sunset, and many people reported accidents and problems because of this. In general safety – both physical safety from accidents and reducing the risk of thefts or damage – was highlighted by interviewees as being linked to energy. In Rwanda some streetlighting was present in Mahama camp, but lights that had been installed in Gihembe some time ago had been vandalised and were no longer working. Very few of the community facilities visited in the Rwandan camps had reliable energy access. Some spaces were unelectrified while some were connected to generators, but not ones that were working. Broken or faulty technologies seemed to be common – such as the broken streetlamp in Figure 3.1. There appeared to be fewer examples of energy public services in the Rwandan camps, but the desired level of energy access is very similar to that in Kakuma.

In all spaces in both camps examples of energy technologies that had been installed and then fallen into disrepair were common. A pattern began to emerge of temporary solutions, which failed after a short period and a lack of follow-up or substantive investment over time – such as streetlighting, which lasted a couple of years after being installed but, when damaged or broken, was not repaired, replaced or even removed. For example, disused streetlights remained in place in Gihembe long after they had stopped working and even newer solutions, such as those in

Mahama, were often damaged or faulty. Overall the repeated instances of such failures gave the camps a feeling of neglect and forgotten technologies. This became a bone of contention with refugee communities – who rightly complained that such technologies became an afterthought once a project had been completed, with little thought given to longer-term needs.

As the following sections will describe, while there was considerable evidence of energy needs and uses in both community facilities and



Figure 3.1. Solar streetlight in Mahama, Rwanda. © Sarah Rosenberg-Jansen.

humanitarian operations there was a limited amount of energy actually available. Particularly in the case of refugee community spaces, unmet electricity needs and dark spaces were common – while even for humanitarian operations, power was often intermittent or lacking.

Institutional Energy Users: Refugee Communities and Humanitarian Organisations

Energy for Schools, Hospitals and Community Uses

A key use of energy within refugee camps is for schools and training spaces. For example, lighting for classrooms, power for computers and school offices, and fuel for cooking school lunches. Training centres – such as colleges, where students can learn specialist electrical or mechanical skills – also require electricity for tutoring in IT skills, hairdressing, motorcycle repair, electrician-training programmes and business-development courses. Despite these substantial energy needs many refugee school spaces were not electrified or had only minimal lighting.

Some schools used to have power – in Gihembe with the religious group, they used to have a generator there. It was used for laptops and lights and plugging in things. And printing. But now because of the lack of electricity the students drop out. They can still go to the committee [the camp refugee committee] to type reports and print them, but they have to pay for this. This is not good for the students. But worse for the teachers – sometimes they cannot type their report there because they must put in confidential things in the reports that no-one should see, so they cannot type and print them there. They are not allowed to be seen by anyone. Without the electricity, these issues go unreported – they can't do the report, so they don't tell anyone. (Refugee living in Rwanda)

As this interviewee reflected, the limited energy within schools was a source of low morale within the camps. Teachers and students I spoke to were frustrated with the lack of energy, and found it challenging to do basic tasks without electricity. Several teachers mentioned that they were reliant on energy services in the local markets to be able to type and print resources for their students. They also reported that many students would cluster in spaces with public lighting – such as toilet blocks and outside NGO offices – to do their homework at night. In some cases interviewees mentioned that girls in their class were falling behind as they could not visit these spaces at night and therefore could not do their homework. The impact of a lack of electricity in primary schools, and many secondary schools, was significant and limited the possibilities for many students and their teachers to enjoy school and learn productively.

For senior students and adult learners some NGOs provide electrical-training courses for refugees in Kakuma on solar energy – for example, a Norwegian Refugee Council (NRC) programme offering the opportunity for older students to learn about solar technologies, including how to carry out electrical repairs and the installation of technologies for various purposes (Crown Agents 2017). These training spaces require electricity to power appliances and enable students to learn about electricity installation, repair and maintenance. Many of the students I spoke to during the course of my research highlighted that a lack of energy at home and at school limited their learning.

Now is the summer and we only have a couple of summer classes, but in the rest of the year we have many many classes a day and need probably twice as much power. But now we are building another NRC site, another set of classrooms to share with other teaching skills organisations. We loaned the panels and the other generator to them. They are using the power for building, not teaching. For constructions of the classrooms and the offices, so they need a lot more power for all that than us at the moment. We lend them the panels and the power. It is good to share here, then we can do more, have more students, and more progress. (Refugee living in Kenya)



Figure 3.2. Norwegian Refugee Council electrical-training centre: practice board in electrical class in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

In 2021 UNHCR released a report on sustainable energy investments in community facilities. In Kenya UNHCR reported that ‘15 social institutions have access to electricity from the mini-grid operated in the Kalobeyei settlement’ (UNHCR 2021c: 7) and that ‘a renewable energy system scale-up programme has started with the potential to provide 31 schools and 7 health facilities with improved access to electricity for the benefit of up to 69,000 students and 150,000 patients’ (Ibid.: 9). Despite this progress many community spaces and schools remain without reliable or sustainable energy. The need for sustainable energy was highlighted by interviewees, suggesting that while some new installations had occurred these were not necessarily meeting the energy needs of refugees in community spaces such as schools and training centres.

The schools have neither electricity nor lights, or solar systems. This is a big challenge for them – it stops them using technologies like TVs, printers, barriers, and phones. They don’t even have a scanner, they have to walk to the village [local town] with the documents and scan them there. It is a big problem for the students – students at this school will soon be doing exams on laptops and not on printed paper. It needs to change because in the other national schools, they have this, and it will affect the students in the national exams – where they have to do it on a computer. They need more solar energy for this. They can put those big panels on the school roofs – it would be perfect – it would be right there on the school. Then one wire from the panel on the roof to the laptop and poof!! The laptop will turn on. That would be excellent. There is an initiative of the government to have one laptop per child in schools, so it would work. But here it is not yet possible because of the lack of electricity – from solar or other sources. (Refugee living in Rwanda)

Another key need for energy in community spaces is energy for health clinics and hospitals. Hospitals, particularly, use a considerable amount of energy – for appliances to take measurements and sterilise equipment, and to power machines during surgeries and healthcare appointments as well as lighting for clinics and hot water for cleaning. Most health spaces I visited in the camps had some form of electricity connection – often from a diesel generator. For example, in Kigeme the clinic had a grid connection as well as its own back-up generator and was run jointly by UNHCR and the American Refugee Council (ARC) within the camp. Power was viewed as important for hospitals as it had a clear use: electricity to allow machines to run medical tests, and keeping vaccines cool.

Power is very important here; we have the wires [points overhead to national grid connection] and our own generator. The power must not go off, or not for very long. We have a lot of patients here and a lot of equipment for tests. And the fridges for keeping things cool, some things must be kept cold like

the vaccines. It is very important and we pay for it [the power and the generator]. (Refugee living in Rwanda)

While the importance of power for health spaces was almost universally recognised, many of the clinics and hospitals I visited struggled with issues of reliable or affordable power. In some cases this was because the diesel generator would break down, in others it was that diesel was so expensive the clinic could not always afford to buy it. As one doctor I interviewed said: 'it is a disgrace, when the power goes off. I had to buy a headlamp to use for examinations at these moments. Every time I am forced to use it, I think: these are dark times' (Medical professional living in Kigeme camp in Rwanda).

As there is a clear link between electricity and human life, responsibility for power was often prioritised by either NGOs or humanitarian agencies. However, as a result some uses of power and appliances were judged 'more important' than others. For example – energy for health centres was prioritised over energy for household or businesses users.

It was always going on and off [the electricity], so I made them [the camp managers] buy me another one [generator]. A separate one, just for us in



Figure 3.3. Appliances and medical equipment using power in the health centre in Kigeme, Rwanda. © Sarah Rosenberg-Jansen.

the distribution point. We share it with the clinic now, but I was asking for a long time for one. In the office we are supporting the young mothers, with the very small babies, we must weigh them and record the baby's weight. We must have electricity to do this – for the scales and the computer, and the warmth for the small babies. We need it here, electricity, as a priority. There must be enough power for the heating – the babies must be warm. For everything else it is easy. When I asked them for power [the camp managers] they could have brought me some solar panels, I do not care, I only need the electricity for the spaces. (Refugee health worker living in Rwanda)

In this example energy was needed for heating to keep babies and their mothers warm during treatment. As this is deemed an essential service and the link between energy and preserving life is clear, the health worker faced relatively few problems in accessing energy. Even despite this the NGO still had to secure and buy its own generator and fuel independently from humanitarian agencies. This was a common pattern during my research – especially in the case of local and international NGOs – when smaller organisations in the camps were seen to act independently and source their own energy supplies.

This is my generator. But it is worth it, now we have power all the time and can run the computers, the printer, the registrations in the office [NRC training centre administration block]. And the students also use the power from it [the generator]– for lighting in the classroom and for their computer lessons. It is a very good generator, it didn't break yet and I have had [it] for a long time. I have a technician friend who is working for NRC as well, and he comes sometimes to fix it. Well not fix it, as it has not broken yet, but look at it – check it is working well. I think he cleans parts ... I don't know – it is a magic machine! A machine that I don't know how it works, but when it is humming and making noise it is on and working and then we have all the electricity we want. [laughs] I will introduce you to my technician friend, I think he would know everything and like to meet a lady who wants to know everything about electricity. (NGO humanitarian worker living in Kenya)

Meanwhile, many NGOs and community facilities within the Rwandan camps experienced a lack of power and relied on diesel generators. In general there has been a recent movement in some camps to develop sustainable-energy business models and move towards renewable technologies where possible (UNITAR 2019). In many cases these initiatives have focused on energy for community facilities: solar streetlighting for public spaces; the solarisation of health clinics; and small mini-grid solutions for community halls, churches and refugee spaces. For example, the company Renewvia now operates the largest mini-grid in East Africa, based in Kalobeyei refugee camp in Kenya (Renewvia 2023). The solar solution provides considerable energy for community facilities, operations and



Figure 3.4. Generator providing power for community centre in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

some refugee businesses, and has enabled substantive and reliable electricity access for the first time. Interviewees described the benefits they saw in solar solutions – as can be seen from the quotes from interviews highlighted below.

More electricity means that I think, more progress. We liked the panels here, not just for the electricity, but because then visitors would come and see the big NRC sign [points to sign and flag] and see the panels either side, and they would say ‘this is a good amount of progress, probably you have a good operation here, we will provide more money and resources’. Not for the electricity of course, they are not paying for that, but for the computers and welding equipment, and for the books, the things the students need. [sighs] Now I wish the panels were here, but I can take you after lunch, to the new site and you will see them there. You can imagine I think, the nice panels here, and feel that is good. (NGO humanitarian worker living in Kenya)

The examples above provide a description of some of the public and community spaces that had access to energy in the camps. However, far more often it was the case that refugee community spaces were unelectrified

or relied on informal methods of connection, such as temporary lighting or light from solar lanterns. Energy needs in community facilities across the refugee camps were considerable, and many refugees reported that they felt abandoned and excluded from accessing power in public spaces. One interviewee, a refugee living in Rwanda, commented, 'It is like we are not allowed to use it, the public electricity, it is only for humanitarians, not for us refugees'. Such sentiments highlight the division many refugees felt between the energy provided for community facilities and the electricity available for humanitarians in their offices and spaces.

Energy for Humanitarian Operations

While the situations in Kenya and Rwanda were different, similar patterns of operational energy use were observed in both countries. In food-distribution centres, administrative spaces and the premises of humanitarian organisations, energy was everywhere. As Figures 3.5, 3.6 and 3.7 highlight, computers, phone chargers, printers and scanners, and other electrical equipment was everywhere. In office kitchens kettles boiled and fridges purred, stove tops and microwaves sat waiting for food preparation and fluorescent lighting buzzed overhead. In both countries, camp operations were reliant on diesel power for operations and many operational spaces were fully electrified.

However, humanitarian staff working within the camps were often not aware of the different energy connections or possibilities within their spaces. Despite having considerable electricity access, including Kigeme being connected to the national grid, many humanitarian staff within the camps referred to the camps as 'un electrified'. As one interviewee, a humanitarian energy practitioner living in Rwanda, commented, 'No, we cannot have good energy here, it [the national grid] is too far away'. However, the reality is quite different: Figure 3.5 highlights national-grid wires running overhead, for instance. When I suggested the grid was close by and that the camp was connected to the grid, pointing overhead to this view, he responded, 'Oh. I never looked up and saw that before'.

This lack of knowledge about energy was a common experience during my discussions with humanitarians. For example, on my way to interview a representative of one of the main humanitarian agencies in Kakuma – a manager living and working there – I walked through her office compound and observed the vast amounts of electricity available: lights on in the middle of the day; air conditioning bellowing out cold air; chilled water from coolers; computers, printers, desk phones, TVs, cameras, DVD players and speakers – all using electricity within offices. Outside the office door fairy lights were hung around the compound gardens, there was streetlighting and the hum of a nearby generator, electricity was used



Figure 3.5. Electricity connections overhead in Kigeme, Rwanda. © Sarah Rosenberg-Jansen.

to pump water to irrigate the gardens of the compound and mobile phones were charging in many sockets. Electricity was very visible within the camps. Despite this, during our discussion the interviewee commented: ‘We don’t use energy [for ourselves in the operations]. We have some lights and that is it ... That energy surrounding our office is all provided by someone else, we don’t do anything about it. It is not ours and we are only switching on the lights and the computers’.

After a few weeks in Kakuma I understood that while this interviewee officially had a job working on energy and environment issues, and was involved in firewood distribution and the planting centres, she did not have a role in regard to electricity. I was interested as to whether this was because she did not personally consider it important or whether the institution did not work on electricity. Therefore, I asked for another interview. This time I explained my position as a researcher who was interested in learning about all the different types of energy across the camps. I started by showing her my photos of the energy uses I had seen in operation and offices. During the discussion the interviewee responded: ‘So, electricity is all the things that turn on and off? So ... all these things are using electricity and it is costing us money?’ I confirmed that it was costing someone money and she responded in wonder and shock: ‘Who does it? How are they paying for it? I don’t even know who [the] person would be to ask!’



Figure 3.6. Energy appliances in an office in Kakuma, Kenya. © Sarah Rosenberg-Jansen.

After this interview I regularly ran into this manager during my field-work, and she often asked, ‘Did you find any new energy today?’ and ‘Is this energy?’ and pointed at things. The things she pointed out were always electrical, and yet she was often surprised when the answer was yes. At the

end of my last trip in Kakuma, I went to show her a final selection of all the photos of spaces I had taken.

This is incredible, all these things, they are all electrical? And they are everywhere in the camp? On the streets, and in the compounds, and in my office! I have been asking and asking, who knows about this in [her institution]? And no-one knows, it is like a mystery – where does it all [the electricity] come from? I am thinking UNHCR, because they are doing a lot of odd things. But who knows, it could be the Kenyans [national government], or anyone. I am looking every day now at the centre [distribution point] and I am seeing people using their phones, and computers, and the scanners, and wondering, ‘Why did I not think of this before?’. One day I sat by the generator and I asked the sweeping man, ‘Where does this [the generator] come from?’ He did not know and he said a man comes sometimes to look at it, but it always works. I was very excited and asked him, ‘Which man? Is he wearing blue [UNHCR colour], orange [NRC colour], or another – has he another name?’ He said he didn’t know and the man was tall, with a hat on. This did not help me solve the mystery of the generator. But at least now I know what is in the box, and that it is a generator [grinned and hugged me]. (Humanitarian agency working living and working in Kakuma Kenya)

Figures 3.6 and 3.7 highlight some of the spaces the interviewee talked about and are examples of the photos I shared with her, including energy sources and technologies. Overall in operational spaces, a huge number of electrical technologies were visible – including diesel generator sets, lights, computers, sockets, wires, fans, plug sockets, phones, chargers, screens for displaying information, virtual eye scanners and fingerprinting machines. After some time in Kakuma conducting discussions with humanitarian agencies and NGOs, it became clear that there were often designated people for energy (‘energy focal points’) within the camps. The fact that it was not easy to find these coordinators, and that they themselves were often not clear about their role regarding energy, was very revealing. Overall within the camps in Kenya and Rwanda there was a considerable lack of engagement with energy sources within institutions.

Similar opinions were repeated in many interviews conducted with practitioners; in general, very few humanitarians I spoke to understood the basics of energy or knew how their offices were powered. Part of the reason for this may be that until recently energy for operational users in refugee camps was not readily considered by the humanitarian or development communities. The majority of field operations use diesel generators or in some cases are connected to the national grid, and have considerable levels of power available within office and living quarters. This is usually sourced by an operational specialist and procured from a private-sector supplier or national energy grid, and therefore requires very little engagement by the end users of the electricity – the humanitarians themselves.



Figure 3.7. Laptops in use at a food-distribution site in Kakuma, Kenya.
© Sarah Rosenberg-Jansen.

This lack of engagement on energy was common within the camps, with many interviewees commenting that energy was for ‘technical specialists’ and that they didn’t know anything about it. One interviewee, a humanitarian worker in Rwanda, even remarked, ‘Who cares, some old diesel generator in a shed somewhere, why would anyone care about this?’ This detachment from and disparagement of energy meant that it was often

difficult to talk to humanitarians about energy technologies. Interestingly this pattern did not seem to be repeated for other technologies. For example, when I asked similar questions about shelter or WASH technologies, most humanitarians could offer an opinion on what they were, how they came to be in the camps and which organisations were responsible for them. Badging all energy as ‘technical’, even when the basic technologies are lanterns and firewood and require very little technical engagement, represented repeated problems in energy discussions in camps – as the below example demonstrates.

In operational and community spaces it was often unclear who to talk to, and considered action on public energy was sporadic. As an example of this, on arriving in Kigeme camp in Rwanda one of the first sites I tried to visit and interview people at was a water-pumping station. The space contained the water-pumping infrastructure, the diesel generators supplying the power and a number of disused manual technologies for water pumping. This space was interesting for a number of reasons: it spanned across large areas of the camp, with the pumping station at the bottom of a hill, running up to the water storage tank. There were also several water-collection sites across the camp supplied by this water. Despite water distribution being one of the core humanitarian life-preserving activities of the camp, I was unable to find anyone within the camp to have detailed conversations about the water pumping with. Many of the people shrugged when I asked who to talk to, and said that maybe UNHCR would know.

I informally interviewed as many people as possible within the camp on the water-pumping facilities but there did not appear to be one core organisation or individual to discuss the technology or process with. While having informal conversations with people using water-distribution points and those managing the water-pumping system, it became clear that few people understood energy had anything to do with the way water or energy was being used across the space. In the end the people who seemed to know most about the system behind the water pumping were the refugee security guards – humanitarian WASH workers – who were guarding the diesel generators. Two young men in their thirties, they guarded the space and ensured that no one interfered with the equipment and that children did not play next to the generators. They thought that UNHCR paid for the diesel and the generators but did not know how much this cost or the options for switching to solar or other solutions. Interestingly, the main topic the guards were keen to talk about was the ‘broken’ water pumps – manual foot-powered water pumps that can be used once water has been pumped to a particular site to extract water from larger containers. These foot pumps are not electrical but can be useful to move water into smaller, handheld jerry cans or containers for household use. When I asked about these pumps they laughed and said, ‘They are never working:

children play on them, break them; the rich people keep giving them, and we keep all the broken ones hiding here behind the power house, where no-one goes’.

When I arrived back at the regional field office I continued my questions, but even the camp managers who ran the system were uncertain how the water-pumping bills were paid. While at the household level I witnessed how well informed refugee communities were about energy and its sources, for access to energy in public spaces the picture was quite different – very few humanitarians were engaged with or informed on the topic of energy for use in public spaces.

The story above highlights one of the key problems in researching energy in the camps: it was very rarely clear whom to speak to about energy or which institution was responsible for power. This story also highlights that many technologies – such as diesel generators and foot-operated water pumps – are often ‘hidden’ out of sight behind structures and in buildings ‘where no-one goes’. The fact that entrance to these spaces was restricted by security guards and that I – as a White, international woman – could easily gain entrance but that the refugee children and mothers I had been speaking to outside the space could not, also demonstrates the way in which many energy spaces within the camps were controlled.

Particularly, it was often difficult to establish how energy was paid for by operations. Initial questioning, such as that conducted in the story above, revealed that misinformation on energy was common, and interviewees were generally unsure about payment modes or how technologies were purchased. This became a pattern and I could rarely establish actual payment levels. There seemed to be a number of truths, but few facts, regarding the operational installation and payment for energy within refugee settings. Importing expensive diesel to remote locations in Rwanda and Kenya is expensive. To highlight the scale and costs of operational energy a recent report suggested that ‘around 5 per cent of humanitarian agencies’ expenditure goes on diesel, petrol and associated costs such as fixing generators. That would mean that the sector spent some \$1.2 billion on polluting fuel in 2017’, and that using renewable and energy-efficiency measures ‘could mean operational savings of over \$517 million a year for the humanitarian sector, roughly equal to 5 per cent of UNHCR’s funding gap for 2017’ (Grafham and Lahn 2018: 4). This is obviously an incredible rate of spending, suggesting that the costs of power for operations in humanitarian settings are similar to or even above those required in other developing countries or even European contexts.

In some cases humanitarian organisations also faced problems with energy for their own operations. While Mahama and Kigeme in Rwanda are grid connected, they also have back-up and supplementary diesel generators. The other camps all rely on off-grid diesel generation for

their power. The case of Nyabiheke camp in Rwanda is particularly challenging: the camp is quite remote, and during most of my visits there no power for the operations was available. Figures 3.8 and 3.9 capture some of the offices and facility buildings without power.

In summary, for public spaces there was limited and intermittent access to energy technologies and energy services in general. Schools and community spaces were often completely unelectrified, and power in health clinics and for water pumping was intermittent. For humanitarian operations, however, many spaces were electrified. While some interviewees were able to talk about energy there was a general feeling of lack of engagement. There was a grey area over whose responsibility it is to power community facilities and some NGO operations, which is part of the problem underpinning reliable energy access in the camps and, as is discussed in the sections below, was contributing to an absence of energy and of energy ownership in these spaces.

Public Energy Absences and Absent Knowledge

The cases cited throughout this chapter have highlighted examples of refugee camps being underserved in terms of energy, illustrating how many spaces were unelectrified or faced limited access to cooking fuels and technologies. The absence of energy had a considerable impact on public spaces in refugee camps. For example, community centres and churches could not be used after dark, schools had no access to electricity or appliances and spaces of productive uses could not be used due to a lack of power. This pattern was more common in the Rwandan camps than in Kenya, perhaps due to the higher levels of NGO and agency investment in Kakuma in the former country. The example below highlights a typical experience of the lack of energy in public spaces: it documents a lack of energy in a community hall that hosted a carpentry workshop and a women's cooperative.

During one of my visits to Nyabiheke in Rwanda I met with a refugee man who had heard I was interested in energy. He took me to see his workshop, which was in part of the public buildings and facilities set aside for community activities. Initially I had understood that his workshop and the hall were electrified as he talked a lot about solar panels and how useful they were. But on arriving it became clear that he wanted panels rather than had them, and was keen to tell me about all the things he would make once he had power back. He started by giving me a tour of the space, showing me his workshop, the wood and sanding tools, and then we began to discuss the importance of power for his trade. He said: 'We need it, the power, always. It must be on. Else this does not work [points to the sanding machine in the picture below] or this [the drill]. Energy is important for all of us. We must work often by torches for light'.

The interviewee then took me into the building next door where the women's cooperative and meeting space was. He discussed with the women there, who happened to be having a finance meeting about the funds available in the cooperative, and asked them if they would pay for energy. He then led me to a small table that contained electric torches and showed me the light switches next to it, which were not working due to the lack of power, and confirmed that they used to get electricity from an informal connection with the UNHCR generators. But now the generators were not working most of the time, and even when they were the centre would not get electricity that way.

The community centre and carpentry workshop were connected to power in theory, but had had no access to electricity for some time. This was because the space used to be connected to UNHCR generators, but more recently the workshop had not been allowed access to this power. In any case the generators were not working during the visit. The community was annoyed about this because, as further interviewees also commented, if they had control over the system they would be able to secure electricity and pay for it. However, they were not even given this option by the camp authorities. In this case the interviewee remarked that the community would find power themselves and pay for it, if the NGOs and agencies in the camp helped them to contact some energy suppliers.

This story highlights an important point: that many refugees in community spaces seemed willing and able to pay for energy access, but in many cases felt restricted in their ability to do so. During a number of interviews refugees stressed that this was because they felt the humanitarian agencies and NGOs were responsible while they (refugees) were not allowed to install infrastructure or energy technologies. As this interviewee commented, 'We will find it ourselves'. He was keen to develop solutions within his community. In this case the hall was not electrified, and this seemed to be due to both a lack of knowledge on how and where to find energy technologies and a lack of permission from the agencies controlling the camp. This was more often the case in the Rwandan camps than in Kakuma – where NGOs, especially, were more active in installing energy – but was a common pattern across community facilities.

While some humanitarian practitioners within the refugee camps were able to talk about the community uses of energy, there was a general feeling of lack of engagement about how this could be done. Interviewees gave the impression that energy access in public spaces was out of their control and was managed by other people – for example, the institutions in the camps, the refugee committees, the national government agencies and NGOs working within the camps. However, many agencies and NGOs did not feel responsible for electrifying these spaces. For example, one interviewee, a humanitarian worker in Kakuma, commented, 'The energy for

refugees is not our concern'. This gap in responsibilities, between refugees who felt they were not allowed to install energy solutions and institutions who felt it was not their responsibility, was common within the camps and is demonstrated by some of the stories in this chapter.

As the example below highlights, in many cases a lack of knowledge within the refugee community on energy was not the problem. The interviewee discussed many technical elements including how renewable sources of power might be useful, the problems caused by lack of energy and the level of knowledge held by community members. One of my first introductions in Nyabiheke was to one of the senior refugee committee members. He highlighted all the 'things that don't work' due to a lack of power. I asked him about energy and how he thought it was in the camps. He responded: 'Nothing here works, there are so many things here that don't work. We will go and I will show you some of them, all around the camp. This is why I am one of the leaders here because I am promising to fix these things that don't work'.

We spent the day together walked around Nyabiheke with him pointing out things that 'don't work', starting at the health centre. There were many things at the health centre that were broken, including phones, computers, lighting and all the electrical appliances in the lab that required power. I asked the centre staff and the committee member whether the 'things that don't work' are broken or is it because of lack of electricity and he answered: 'It is the power – it is supposed to be on and they [the camp institutions and managers] are saying they have no money for other things like firewood because they have to pay for this. If they are paying for it, why is it not working?!

Next we walked across to the camp administration spaces where the UNHCR and NGO offices are. Here the committee member stopped for a long conversation with a UNHCR staff member and explained that he was telling me about the power. When he came back to me, he remarked:

He doesn't know anything about the power. I asked him about the power here, in the offices, and he tells me the lights are off and his computer will not charge. So he is going home early to charge it in his home. I am asking him, 'Why can you go home?' I cannot get power in my home, or there [gestures to clinic behind us, where we have just been], or anywhere, so nothing is working'. (Refugee living in Rwanda)

The refugee community member highlighted that the humanitarian agencies within the camps were in fact responsible for ensuring power was available in the clinics, and that they had acknowledged this during other conversations with the refugee committee by stating they could not afford to increase the firewood rations because they had to pay other costs, such as the electricity bills for the clinics. He also drew attention to the fact that



Figure 3.8. Health centre: appliances that were not working, chest fridge for vaccines with temperature monitor to show the range within which vaccines should be kept, Nyabiheke, Rwanda. © Sarah Rosenberg-Jansen.

refugees within the camps were not allowed to fix the generators and it was a technology that was inaccessible to him. In this case it was unreachable both in terms of location, as the generators were kept off-site in a guarded space outside the camp, and inaccessible as he was not allowed to fix the power and the distribution connections. The level of knowledge on energy within this community was high, and the interviewee highlighted the difference between this and the knowledge of the UNHCR staff member on the issue: ‘He doesn’t know anything about the power’. Here it became



Figure 3.9. Generator equipment in Nyabiheke, Rwanda. © Sarah Rosenberg-Jansen.

evident that while humanitarian agency staff were perceived to have control over energy resources, they often did not have the knowledge or skills to develop solutions or manage existing resources.

During interviews on energy for public spaces, interviewees often commented on the issue of whether they were allowed to undertake certain activities. This highlighted the issue of control in the camps: many refugees felt that they did not have the authority to develop energy solutions for community facilities and that this authority belonged to UNHCR, the camp managers or NGOs. In many cases this issue was not about capacity: refugee communities knew a lot about energy and were able to secure and develop solutions themselves, as they often did in their homes and businesses. Rather, it focused on the fact that they did not feel they were allowed to provide energy in public spaces, especially in terms of larger-scale infrastructure such as churches and community halls. There was a key difference here between the communities in Kakuma and the Rwandan camps: in Kakuma this issue was not so prominent and I observed some communities taking the initiative and electrifying their spaces; however, in Rwanda this was not the case. This may have been due to the different institutional arrangements between the two countries – for example, the fact that the Rwandan government are more involved in the camps and in the past have been quite strict about the construction of physical infrastructure such as buildings. But in both cases refugees felt it was outside their remit to install substantial electricity solutions on community infrastructure.

One of the most notable things about this set of interviews was the lack of responsibility for power in public spaces. In the different camps many different agencies and actors were suggested as being responsible for energy in these community areas. For example, UNHCR would often suggest that power for health clinics was managed by the NGO running the clinic, whereas in reality the NGO used electricity from UNHCR generators. For community halls and playgrounds NGOs expected the refugee communities to provide power in these spaces, and, while refugees were often keen to do so, they were often stopped by national actors or humanitarian agencies who claimed they were the only ones allowed to provide space and public lighting. This created a feeling of overlapping or competing responsibilities for energy in communities' spaces, which often led to a lack of provision as roles and responsibilities were not clear. The impacts of this were considerable: the majority of community facilities were left unelectrified due to a lack of defined institutional responsibilities.

Institutions can be said to control access and solutions in the camps, but do not necessarily take ownership of the provision of energy services. These restrictions are often political, and are determined by institutional remits and perceived roles and responsibilities within the camps. Restrictions were not just about logistics or the formal process of permissions to build structures within the camps, but rather were dictated by views about who should do what within the camps. These decisions were guided by the perceptions of agency staff about who is able to act in humanitarian settings, and a general feeling I got from many practitioner interviewees was that if humanitarian agencies could not install energy, then why would refugees be able to do it? This culture of control was often disempowering for refugee communities who were keen to build and install their own energy technologies, but who felt restricted by the humanitarian system designed to support them. We will return to this theme in the following chapter on energy provision to open up discussions on who is responsible for supplying energy and making decisions about access.

This section has summarised evidence to suggest that community facilities in refugee camps do not have adequate electricity provision, that many refugee spaces remain in the dark. The absence of energy seems to stem from a number of factors, the most prominent being that there were no clear roles and responsibilities for who should be providing energy for community facilities. In some situations, in Kenya, refugee communities and NGOs had found space and funding to develop energy projects themselves. In Rwanda, however, access seemed to be much more restricted and many still viewed it as the responsibility of agencies to provide electricity to community facilities. In general more energy was available in humanitarian operations than community facilities, but there were still a number of difficult connections within these spaces. Energy absences

were often not just about a physical lack of power but also about a lack of knowledge and a lack of responsibility for energy access.

Chapter Conclusion: Disconnects and Energy Choices

A series of fundamental disconnects and absences have been presented within refugee camps and global narratives on energy. Physical gaps are visible in connections in community facilities, knowledge gaps remain between refugee and operational knowledge on energy and institutional intermittency creates gaps in responsibilities for energy provision. Within refugee camps inequality is extremely visible in energy access: there are large differences between energy provided for operations and for community facilities, there are variations between energy used by refugees and agencies, and there are clear inequalities on who is able to take responsibility for these issues.

Lack of experience with energy brought a number of issues and benefits during my fieldwork. Initially access to camps and to people to talk about energy was easy, as people did not think the issue was important so were happy to let me ask questions and move about the camps. However, as I got further into fieldwork I realised that there was a structural absence of knowledge on energy present within the camp administration organisations and humanitarian staff, which meant collecting data on this topic was challenging. It was clear that for organisations across all the camps there was little understanding of sustainable energy access, and that energy access for operations was diesel-generation-led. For example, many humanitarian agency field professionals were unaware that generators powered their offices and homes, and were open about their lack of knowledge on how these systems worked. There was also a disjuncture with many of the interviewees – who often gave the impression that energy was the responsibility and remit of ‘someone else’, but who that was often did not become clear. The result of this lack of engagement was both literal and institutional darkness. In some camps this had the effect of generators being off for months at a time (such as Nyabiheke), and in others large spaces of the camp were unelectrified (for example, in Kigeme). Institutional darkness has a number of causes, but two central ones were a lack of knowledge and a lack of ownership. Institutional ignorance and inaction is, in my view, political, as it represents a series of choices about what is important (food, water, shelter, protection needs) and what is not (energy).

The politics of humanitarianism matters here (Fassin 2007). Operational energy needs are valued and important, as was evidenced by the fact that generators were present in the camps and that some uses of energy, such as

power for health clinics, were seen as important. However, there are still institutional failings within the humanitarian system in terms of the provision of energy. Energy may be valued in terms of some users (humanitarians) but, overall, the humanitarian system still did not appear to value energy as a critical resource for refugee users. As a result, training to maintain and repair technologies is not invested in and many humanitarian field operations are without power. This suggests a difference within humanitarian users themselves: international and headquarters staff are seen as essential, whereas field staff and NGO workers in the camps have to experience long delays and often go without electricity for weeks and months. Therefore, the politics of energy can be understood to differentiate between humanitarian users as well as between humanitarian staff and refugees.

In summary, this chapter has put forward the idea that for operational power use in the Rwandan and Kenyan camps knowledge and ownership were limited. Additionally, interactions on energy with humanitarian organisations, by both myself as a researcher and with refugees themselves, can be characterised as difficult. Perceptions about how energy should be provided, both for refugee communities and for humanitarian operations, were mixed and institutional engagement on energy was largely intermittent. Energy choices in this context are political: value judgements are being made about how energy should be provided, and who it should be provided for. The following chapter considers the implications of these challenges, considering what these issues mean in terms of who provides and supplies energy.

The Provision of Energy Access in Refugee Camps

Introduction to Energy Provision for Refugees

Now we enter the confusing world of who provides energy in refugee camps. In theory responsibility for the provision of energy products and services lies with humanitarian agencies. But as we will see in the coming pages, the reality of energy provision is far from simple. Multiple agencies, NGOs and practitioner groups are involved in the provision of energy. Institutional responsibilities for energy often become blurred in the complicated world of humanitarianism, where many organisations are under-resourced and organisational remits are frequently unclear. As a result of this confusion, the provision of energy for refugees is commonly piecemeal and there is limited formal governance of energy in humanitarian settings (Thomas, Rosenberg-Jansen and Jenks 2021).

Throughout the camps, a vein of anger flowed in discussions on energy during my research: frustrations from humanitarian-sector workers on the limitations of their organisations; exasperated comments from refugee communities that energy provision was not considered in many of their homes, businesses and community facilities; and visceral reactions from energy specialists about the lack of understanding on the importance of energy as an issue. You will hear this anger within the quotes in this chapter, as many of the people interviewed on energy provision commented openly and directly on their frustrations. My interviews conducted on this topic were also some of the longest conversations I had during my research – perhaps because many interviewees were able to speak freely about this under-recognised issue.

Cory Rogers and Louise Bloom highlight that infrastructure and public services in refugee camps ‘are provided through a vast range of delivery mechanisms and actors – both formal and informal’ (2016: 1). This is true not only of the larger-scale infrastructure in the camps – such as latrines, water systems, hospitals, protection centres and community facilities – but also of the smaller-scale energy products and services there. Some agencies and NGOs in both Rwanda and Kenya had run energy programmes – for

example, distributing solar lanterns to households, supplying firewood for cooking and managing projects that made cookstoves within the camps. Provision of energy, however, looks different depending on what type of energy is considered. ‘Basic’ needs such as firewood provision are met in part by institutions such as UNHCR and partners, whereas electricity needs such as power for TVs are not usually fulfilled by humanitarian agencies. Electricity provision for refugee homes and businesses was usually met by refugee enterprises and through local markets.

The absence of energy provision is one of the standout themes that emerged during my research. As outlined in chapter 3 on energy access in public and community facilities, many refugee spaces were not electrified. Gaps in provision took a number of forms: substantial absence where almost no energy was provided, intermittent access where energy was provided in an inconsistent manner by the humanitarian system, and in some cases informal access whereby power connections were made without the knowledge or support of humanitarian actors. The lack of systematic provision, and indeed the lack of systematic consideration of energy as an issue, emerges strongly throughout the evidence presented in this chapter.

This chapter first turns to explore the humanitarian provision of energy, highlighting humanitarian and refugee opinions on how energy products and services are supplied. Then we turn to the thorny issue of independent access – the energy secured by refugees themselves through markets and local solutions – which often occurs independently of the humanitarian system. New initiatives, including the solarisation of energy provision, and issues with a lack of provision of energy services are also considered. In the second half of the chapter we hear value judgements on energy provision and draw out the politics of knowledge on energy systems in refugee camps. Finally the chapter reflects on the nature of systematic power and the challenges facing the humanitarian energy system.

Spaces and Suppliers of Energy Provision

Humanitarian Provision of Energy

Multiple actors and organisations have different roles to play and different motivations in the provision of energy through humanitarian response and donor-supported programming. Traditionally implementation in humanitarian spaces has been top-down, guided by donors or agencies and implemented by NGOs and partners (Harrell-Bond and Chambers 1986). To some extent energy in humanitarian settings is no exception: in theory humanitarian agencies are responsible for supplying energy in refugee camps. For refugee households, agencies do this largely through paying implementing partners such as NGOs or private-sector businesses to give

away lanterns and cooking fuel – for example, by providing firewood from centralised distribution points as pictured in Figure 4.1. As outlined in the earlier chapters, energy for refugee businesses, electrical power for households and the energy needs of refugee community facilities are not systematically provided.

For operational needs, agencies and NGOs are responsible for procuring and maintaining energy: at the camp level this is often achieved by organisations procuring a diesel generator and fuel and installing them in the camp. The generator then provides electricity for the core humanitarian services, often UNHCR and WFP as well as some NGOs within the camps. In many cases in Kenya and at a couple of the camps in Rwanda, health clinics and some educational spaces also procured their own generators independently – either as a back-up source of energy or in order to acquire energy access in the first place. The cost of the technologies and fuels then sits directly with the humanitarian organisations (Grafham and Lahn 2018).

Beyond this description, however, is a complicating factor. While many refugee families are reliant on energy provision and cash assistance from humanitarian organisations, when it comes to energy many refugees



Figure 4.1. Stacks of firewood at the firewood-distribution point in Nyabiheke, Rwanda. © Sarah Rosenberg-Jansen.

access energy independently of humanitarian provision. To understand the impacts of this independence we must consider what market access of energy means in terms of the supply of energy to camps. This chapter will first consider the formal responsibilities within the humanitarian system for energy provision, often led by humanitarian organisations, before turning to consider the issue of independent and market-based access within refugee communities.

As humanitarian agencies such as UNHCR manage refugee camps, responsibility for energy supply often sits within their structures and processes (GPA 2022). However, there were often mixed and varying roles on energy from different agencies and implementing partners; confusion rather than coordination often reigned in discussions and within camps. In Kenya and Rwanda failing to coordinate and deliver energy effectively is a constraint of the humanitarian system, as organisational remits on energy are not clear (Huber and Mach 2019). For example, national government actors often have a role on permissions and access to the camps, while private-sector suppliers provide energy technologies and goods, and NGOs often run their own energy programming. During my research I often came across the view that UNHCR – as the lead agency in both Kenya and Rwanda – was viewed as a coordinator of action but did not necessarily directly deliver energy services. As one interviewee commented:

You could consider UNHCR as a socialist government. They should have long-term presence and power, and plenty of money – but do not invest it sustainably – especially on energy. While the private sector will not do it all. So how can we reach the poorest? Because neither UNHCR nor the private sector are doing it. We are trying to do it differently, in create that transition from a purely humanitarian approach to include the market. But after 20 years it is depressing. We have wasted 20 years in the camp environment. We have to move away from this type of ‘socialism’ and one-off interventions. We need after sales service, optional add-ons, a progressive mind-set to ensure this is an organic market for change. Energy affects the way we do business; I can see all the solutions but we need a conducive environment to make sure it happens. (Humanitarian energy practitioner based in Kigali, Rwanda)

This interviewee questioned the role of UNHCR and agencies in delivering energy in camps, suggesting that aid agencies acting within camp environments might not be the most effective way of providing energy solutions. The way humanitarian organisations intervene was frequently characterised as a problem: delivering individual projects and interventions has not led to a systematic change in the way energy is delivered in camps. By referring to UNHCR as a ‘socialist government’ this interviewee implies that despite having intentions to provide social progress

and welfare support, delivering support directly through governmental and inter-governmental mechanisms is very inefficient. Considerable literature suggests that delivering infrastructure investments or resources that need to be highly decentralised is not best achieved through a centralised, bureaucratic set of institutions (Kessides 1993; Shleifer and Vishny 1994). This is particularly true of energy in refugee settings as the energy needs of end users (households, enterprises, community facilities and humanitarian operations) are highly varied and individualised. Humanitarian institutions often struggle to deliver energy within camp settings (Grafham 2022) and are limited by the structures of humanitarian action as well as individual capacity within operations.

In terms of institutional remit there is a mixed picture within the camps. Humanitarian agencies often had strong narratives on whose responsibility energy was. In national offices or headquarters partners often noted that that energy was a joint responsibility between humanitarian operations and NGOs. Once in the camps this picture altered dramatically, with local field officers and staff members becoming angry or confused when discussing whether their organisations should be providing energy for refugees. This is demonstrated in the quote below, when an interviewee asserted that refugees have to be responsible for electrical appliances such as phones and chargers, and that it was not the 'job' of his NGO to take care of 'electricals'.

Well, there are phones, of course. But refugees have to get that for themselves, we are not providing phones and chargers for free. It would only be the men using those anyway, and the women need these cookstoves. That is why we are making these. I like them, the refugees, but they should not get everything the same as Kenyans. It is easy to get confused, there are so many programmes and so much activities. We are doing everything and not really doing anything. Mostly we are doing the cooking energy, the firewood and the cookstoves. We did distribute some lanterns, but people were not really liking them and it was over two years ago so I don't remember lots of things. Plus, we do electricity not electrical, so when things break, they are not fixed. People can get other services for electricals in the market – other lanterns and batteries and things repaired there. That is not our job to help with these things. (Technical energy manager based in Kakuma, Kenya)

When I delved into the issue of 'whose job' it was to provide energy with this interviewee, he suggested responsibility for household electricity lay with UNHCR as the main coordinating body. The official 'energy' partners in both Kenya and Rwanda were often viewed as being responsible only for cooking solutions and firewood distribution – with many interviewees, such as this one, stating that electricity was outside of their remit. While this was the view held by implementing partner interviewees, when

analysing UNHCR and refugee coordination documents it became clear that household electricity was actually a mixed responsibility. However, it was not clear where different elements of responsibility for energy supply should sit between camp coordinators and implementing partners. A political play-off seemed to be happening between humanitarian organisations and their partners – with each claiming the provision of energy was the responsibility of the other, and that their organisation was politically and economically constrained in what it could do.

This interviewee also became quite defensive about energy provision, and conveyed a strong sense of dissatisfaction with the current situation. These displays of defensiveness from overworked, under-budgeted local NGOs were also present in Rwanda. In both countries there seemed to be mixed responsibilities for delivering energy services in practice, even if on paper remits were theoretically clear – for example, UNHCR coordinates and partners implement. Part of the reason for mixed responsibilities may be because so many institutions play different roles in different camps, and remits for action become blurred.

Of the humanitarian agencies involved in energy in refugee camps UNHCR looms large in the discussion, with many energy specialists turning to it for access, coordination and leadership on energy. Yet despite the launch of a new energy strategy in 2019 (UNHCR 2019a), to date the organisation has had limited capacity to support or deliver energy activities. As one interviewee, a humanitarian-sector specialist in New York, put it: ‘We are still at the stage with UNHCR of having the capacity to understand, not to do [energy]. UNHCR still needs to engage with the language of development. We are just not there yet and are still at the protection, blah, blah, blah [stage]. With nothing really being done except encampment’.

As this interviewee implies, an important element guiding the provision of energy for refugees is the protection mandate of UNHCR. Interviewees mentioned the challenge of having to link energy explicitly to the core remit of humanitarian organisations. As the quotes below highlight, the protection mandate can constrain action within humanitarian agencies and limit choices under a ‘protect and provide’ mentality whereby camps are set up to offer a physically *protective* space for vulnerable refugees and humanitarian agencies *provide* only basic products to meet their basic needs for shelter, food, water and safety. Energy and other more life-enhancing services are not deemed essential and so are not provided, although there is increasing recognition that energy access should be a human right and is essential for improving quality of life (Bradbrook and Gardam 2006; SE4ALL 2017). The following excerpt highlights how protection is discussed within humanitarian communities, providing examples of interviewees who were critical of the protection remit and those who felt it was essential to connect energy and protection.

URGGGH! Protection. You can't even fart without mentioning protection. It goes on and on and on as part of [the] discussion about how the energy agenda needs to align with UNHCR's core mandate on protection. Energy is a new consideration for UNHCR, so it needs to be justified in terms of core principles, and high-level political agendas: SGBV [sexual and gender-based violence], gender, cost reduction, and of course protection. But for god's sake they need to say something more meaningful than just, 'We have to protect these poor people'. Times are a-changing. (Humanitarian energy practitioner in Vienna, Austria)

We should mainstream protection into everything we are doing ... it should be natural. We could increase the protection dividend by approaching energy. There is a very clear protection impact [in undertaking energy activities]; however, there isn't mainstreaming and there is not actually a correlation between protection and why people need energy access at all. A mythical story needs to be told to be able to 'do energy'. There is a link between firewood and violence and people are five times more likely to feel as if they will have a bad experience in unlit areas than in lit areas. In whatever you do, we need you to think about protection impacts. We need to make programmes SAFE from the start ... Mainstreaming would be the way to do it. (Humanitarian staff member in Geneva, Switzerland)

For UNHCR definitely, the protection mandate essentially trumps all others. The biggest barrier we had was that we struggled to ear-mark at all, and that funding was often not allocated for a specific project or set of activities. It was always a given that the assumption was the money would be spent on core protection and other activities. We learnt to be very strategic about the types of partnerships and collaborations we [were] working through in order to make sure that, when we do start to get into the details and [are] actually starting to change something, that the organisations you are changing it with see the benefits at the institutional level. (Humanitarian governance specialist in Oxford, UK)

While to some extent UNHCR has been singled out here by interviewees as one agency that faces a considerable number of systematic constraints driven by their core remit, the same arguments can be made about other agencies and implementing partners depending on their core focus of delivering food, water and humanitarian services. In part as a result of humanitarian organisations only focusing on their core remits (such as protection), investment in technical skills on energy is often underfunded (Thomas, Rosenberg-Jansen and Jenks 2021). Often agencies and implementing partners do not have energy experts or skilled technical staff within their own operations. This is a considerable constraint, and a lack of in-house staff is the result of both limited budgets and organisations not having an organisational remit to act on energy. As the following interviewees highlight, the result is often that while individuals within agencies

want to act on energy, they are limited in their technical and operational capacity to do so. Interviewing global-level practitioners on energy within the humanitarian system enabled my research to understand some of the issues facing institutions.

I see very little overall strategic thinking in UNHCR. I don't think that they really have the time to be very strategic; I think they are struggling constantly with just the enormity of the vast, growing problem they have to deal with, and no fucking money. UNHCR are well intentioned, but poorly skilled. Some of the people who work for the UNHCR are some of the most wonderful, motivated, altruistic people on the planet – I mean there are some fabulous individuals there. They are just working within a completely dysfunctional organisation that is inadequately funded. There are all sorts of horrible practices – they don't even know what they are doing. They can't even identify in Rwanda how much they spend on wood. They have no idea. (Donor based in Oslo, Norway)

We asked UNHCR the simplest question: what do you spend on this and that? But they don't know the answers to these things at all. I can ask my staff, 'What [did] we spend last week, last month, or this, that or the other?', and I get an answer. UNHCR don't know what they do, it's amazing. And their procurement and tending process is just hysterical. When I look at the non-food items stuff they distributed in the past to households, and how much they pay for it. And I'm like: 'Oh my god, I could just go into the market in Kigali and I can buy every one of these things cheaper'. Just as a one off, much less in bulk. It's just, I don't know if it is just incompetence, but everywhere they go they are foreigners, *muzungu* who get taken advantage of by the crap people in every country, who are everywhere. They just get taken to the cleaners. It's just staggering that they spend [so] much money and get so little for it, and they don't even know how much they spend. (Private-sector supplier of UNHCR in Oxford, UK)

These quotes highlight that while individuals working within humanitarian agencies are usually seen to be altruistically motivated, often the constraints of the humanitarian system mean they are unable to develop low-cost and appropriate energy solutions. The nature of this failure is further compounded by a lack of knowledge within agencies on their current investments. Therefore, even operations wanting to understand energy problems and spending further are unable to do so as basic information is unavailable. Technical-capacity limitations within agencies are commonly discussed within the sector (UNITAR 2023). However, the evidence and information gap in humanitarian settings is much larger than this, with many parts of the humanitarian sector facing a blank sheet of paper when asking their institution about energy in general (Grafham and Lahn 2018; Lahn and Grafham 2015). Although humanitarian agencies may not have capacity to deliver they are often perceived as having the authority to act.

In many cases this prevents other communities (refugees, NGOs or development specialists) becoming involved in energy provision as the issue is viewed as UNHCR's responsibility, and the lack of capacity facing humanitarian agencies is an issue that is widely spoken about within the sector.

Specifically there appears to be a lack of energy knowledge within humanitarian agencies at the field level. As the interviewee below notes, there are considerable examples of national and local staff not being trained in energy or aware of the importance of energy access in general. Frequently agency staff members engaged with during fieldwork were unaware of energy technologies in the camps, and would often report that the camps were completely unelectrified. In particular, in the Kenyan and Rwandan operations there were very few technical engineers of any kind. This highlights the issue of capacity in humanitarian organisations to manage energy programmes: without dedicated staff working on energy it was very challenging for field operations to support interventions on this topic. As one interviewee pointed out, this may be due to the fact that energy is often seen as a specialist subject and operations are unable to afford expensive, often western, consultants to provide expertise on energy within camp settings. In an interview a key policy-maker on the issue of participation in decision-making in humanitarian settings was keen to convey that the world of humanitarianism has changed but the policies and practices of humanitarian implementation on energy have not necessarily followed suit:

Sometimes people don't see the link between sustainable energy and human dignity ... What more can we do to bring attention to this issue? Sometimes it feels hopeless and people have humanitarian fatigue ... it's no-longer exciting to be a chain-smoking French-man in the middle of no-where building huts. People have higher expectations now, they all want to change the world, 'give-back' on a global scale, and, and I hesitate to say it but it's not working – it is just more white, middle-class men in a room still talking as if their discussion will change the world. The only difference is that now some women and country representatives have joined, those, still stale discussions. (Humanitarian energy policy-maker in New York, USA).

Humanitarian energy policy is a particularly important topic here. Particularly when it comes to the issue of integration and sustainable energy provision in the long-term, humanitarian agencies have an important role to play (Bellanca 2014). As one interviewee highlighted, responsibility for the provision and self-reliance of communities are inherently interwoven:

Now, because of the New York agreement on refugees, they, the refugees, can start to work as nationals, they can start a job, they can go to get jobs,

have renewable energy, and all types of activities in Rwanda. It is good for them, as their prospects for getting out of the camp are small. They will have less dependency on us and move towards self-reliance as we have been planning. The overall progress and socio-economic process will be good, with more access to energy and more income opportunities. We will integrate refugees, and not exclude them, especially for education and energy needs, it will help them. (Refugee living in Rwanda)

These quotes highlight some of the complexities surrounding the provision of energy to refugee communities by humanitarian actors. To understand these issues further we will turn to consider how refugees also access energy independently of humanitarian supply.

Independent Access and Refugee-Led Market Provision

As described in chapters 1 and 2 of this book, energy products and services in camps in Rwanda and Kenya are secured and paid for by refugees themselves by buying from local markets and refugee-led businesses. Depending on the access level of the household or businesses this includes buying household solar products, paying for mobile phone charging, connecting to local informal mini-grids, spending on motorcycle transport to markets, payment for batteries and torches, making or buying cookstoves, paying for access to ‘cinemas’ and watching television in informal shops, going to cafés with lighting or radios, buying charcoal or other fuels or spending resources on additional firewood or charcoal to supplement that distributed by humanitarian agencies. The considerable array of energy uses in refugee camps was largely unregulated and unrecorded, and was powered by informal economies and dynamic mechanisms of local exchange. It is only recently that some studies of informal economies within camps (Betts 2021) and the lived experience of refugees with respect to energy have started to emerge (Rosenberg-Jansen, Njoki and Okello 2018). As a result there is limited detailed exploration of how refugee households and communities secure energy independently from humanitarian provision within the existing literature.

My research suggests that there are a number of elements to the independent access of energy resources by refugee communities. Firstly, the humanitarian provision of energy products and resources in the camps meets only a proportion of energy needs. While firewood was distributed on a monthly basis to families this was frequently not enough to meet basic cooking needs, and if households received any support on electricity access it was usually in the form of a free solar torch or lantern. Therefore, there was a large gap between the level of access provided directly by humanitarian organisations and the amount of energy needed in households.

This gap is being filled by refugees themselves, who are choosing, securing and owning energy products and services directly.

Secondly, a critical element of independent access was choice over energy products and services. As part of independent access many refugee families reported choosing which technologies or sources of energy would suit their needs best. For example, some families connected to the local mini-grid, some bought individual solar lanterns or torches and some invested in solar home systems and batteries. In all interviews refugees gave clear and concise reasons why they had chosen particular forms of energy over other options. Some of these choices were positive, in the sense that refugees could choose between buying different energy products in the market, and some were negative, as many families were guided by cost constraints and could only afford certain products. Such choices were highly informed and showcased the level of refugee knowledge. Humanitarian agencies played almost no role in these choices: I never once heard a refugee say that a humanitarian staff member had helped them choose their energy source.

The third element of independent access is payment for energy products and services: every family I spoke to had paid for some form of energy from local markets or trades, from their own income or resources. Whether this involved paying for candles and matches and buying firewood and charcoal, or saving for a solar home system and making repayments over time, a considerable proportion of household income in refugee camps is spent on energy. I also observed some cases of refugees selling the solar lanterns they had been given for free by humanitarian organisations, and then using the cash received to buy alternative energy resources that better suited their needs. Particularly in the case of single women in the camps in Rwanda this seemed to be common practice, as their need for cash to spend on firewood and charcoal was in some cases quite extreme. Examples were reported of families spending considerable amounts for higher levels of access. For example, in the Ethiopian and Somalian sections of Kakuma, many people were spending upwards of \$50 a month for basic TV access and power in their homes (Corbyn and Vianello 2018). This may not seem like a lot of money but, compared with the cash and financial resources available to the families and the tiny amount of power they received, this was often over half their disposable income. The role of humanitarian agencies in the payment for and provision of energy is complicated. On one hand families rely on cash and voucher distributions from UN agencies and support from implementing partner organisations. On the other hand families can be seen to be accessing energy provision independently. The relationship between these two elements is interdependent, but in terms of decision-making the power dynamics are clearer: refugees choose and pay for the energy

technologies that best fit their needs and humanitarian organisations have little to do with that.

Finally, a point on ownership and supply: energy products bought by refugee families themselves were owned by them. But so too were the products freely distributed to households by agencies – for example, the solar lanterns that have been provided to some families in Kakuma and the camps in Rwanda. Once owned by families, people were free to do as they wished with these products. For example, even in cases where energy products were supplied by humanitarian organisations it was common to see these being resold in the camp markets. There were also examples of humanitarian-supplied technologies, such as solar lanterns and street-lights, being taken apart by refugees and the parts (especially batteries) being sold. Ownership is an important part of independent access in this sense, and energy products can provide small examples of capital within households that can be exchanged or sold for access to other resources.

Humanitarians I spoke with criticised these forms of market trading, suggesting that freely distributed products should not be sold or traded but should be used only for the humanitarian purpose for which they were supplied. As one interviewee highlighted:

We give them it [the energy products] and they just sell it or destroy it for parts. You see it everywhere, the refugees don't value energy goods. They just want to trade the parts for money, for cash. It is so frustrating when they don't use the products for what we intended. We spend all this time and money organising firewood and lights for them and then they sell it. They should be using it to light their homes, so their children can study at night and so the women are safe. But they want the cash more. We stopped providing lanterns in some places because they don't use them for good things. (Humanitarian worker in Kakuma, Kenya)

This mismatch between humanitarian and refugee actions has been explored in other humanitarian sectors (Omata 2022). Opinions on trading energy products in particular were sometimes founded in humanitarian disapproval about the ways in which refugees choose to use their resources. Independent access through markets is generally considered a positive element of self-reliance in refugee communities (Easton-Calabria 2022); however, in the case of energy many humanitarians did not recognise this form of access as it was not provided by them.

The independent and market access of energy by refugees does not stand completely without caveats: humanitarian agencies and governance systems clearly have a role to play within the camps. However, in terms of energy access for refugee families and businesses there appears to be a substantial gap in the humanitarian provision of energy. Ilana Feldman suggests that in this way the politics-of-living concept helps us to understand

how humanitarian action can constrain refugees' lives and limit their choices by reducing 'the people it seeks to help to "mere" victims—objects of compassion, but restricted in their capacity to act as full subjects in their own right' (2012: 155). In not engaging with refugee knowledge on energy, or acknowledging the modes of independent access already in place, the humanitarian system is disempowering refugees. While this may not be a set of intentional actions, the results are quite extreme and there is a considerable divide between refugee and humanitarian-system actions on energy.

Within refugee markets and homes independent access to energy is largely self-governing through refugee markets and informal community structures, and is not usually governed by humanitarian actors. In some cases this lack of support from humanitarian organisations was acknowledged by interviewees. As the quote below suggests, impossible conditions and restrictions were often created by institutions within the camps as, in some locations, camps remained closed to external market suppliers while at the same time humanitarian organisations and NGOs refused to provide fuel or electricity. During one interview in Rwanda on the role of various NGOs and humanitarian energy, the topic turned to responsibilities and who should be in charge of energy. On the topic of self-reliance, the interviewee commented:

We wanted them to own the energy more. They have to find it and get energy and firewood for themselves. They have to do it! We start with the children, so they will know for the rest of their lives that they must do it. If they don't find energy they will starve, so I am knowing they will do it. We cannot provide this for them anymore. (Humanitarian practitioner in Gihembe, Rwanda)

In cases like this one interviewees had very challenging opinions, and were effectively suggesting that refugees would have to find their own energy while actively preventing suppliers from accessing the markets, thus essentially limiting the sources of energy available in the camps. Often during my research I came across environments where there was a substantial disconnect in terms of how institutions are perceived to be responsible for energy and the ways in which refugee families and businesses currently access energy. The types of humanitarian provision outlined above can be understood to have created a number of inequalities within the camps, and reinforced the refugees' perception that humanitarian agencies are not able to support them in terms of energy. This suggests that structures and systems in humanitarian agencies have considerable power impact, and raises questions about how agencies develop energy-intervention programming and whose values guide such programming.

Solarising Solutions and Renewable Energy Provision

So far the evidence has suggested a fairly negative view of the humanitarian provision of energy in refugee camps in Kenya and Rwanda. However, some of the camps in both countries have seen some changes in recent years in terms of access to renewable and sustainable technologies. Several international development and humanitarian programmes have funded solar-lighting interventions – for example, the company Little Sun, which supported the distribution of yellow star-shaped lanterns in camps in Rwanda (Little Sun 2018); the Moving Energy Initiative (MEI) that enabled SHS systems and mini-grid interventions in Kakuma camp (Moving Energy Initiative 2019); the Renewable Energy for Refugees (RE4R) programme in Rwanda that supported the provision of solar home systems in Rwanda (Practical Action 2020); and the and IKEA Foundation Brighter Lives campaign, which distributed solar lanterns to many camps in East Africa (IKEA Foundation 2015). Families also used solar lighting and power they had secured themselves – buying technologies at local markets and paying for energy directly. Whether through donor-funded programmes or market access to technologies, many interviewees reported the benefits and uses of solar technologies within their homes. Indeed, one of the biggest solar mini-grids in East Africa is in Kalobeyei settlement in Kenya (Renewvia 2023).

In addition, agencies such as UNHCR and UNITAR have committed to solarising energy solutions for operations and community facilities (GPA 2023). For example, UNHCR have committed to the provision of sustainable energy in their Global Strategy for Sustainable Energy (UNHCR 2019a), as the following sample from the official UNHCR narrative on energy attests:

Improving access to a clean and sustainable source of energy can transform broken lives. It can power health centres and ensure that life-saving medication is refrigerated. Street lighting allows people to move around camps in greater safety at night, particularly women and girls, and solar-powered lamps mean they can work, cook, study, socialize and continue with their lives long after the sun has gone down. Additionally, with a clean, sustainable fuel, or fuel-efficient technologies, refugees can cook meals and avert the malnutrition and ill-health that may occur when using open fires. (UNHCR 2019b)

Despite such commitments to sustainable energy humanitarian agencies spend over \$108 million on diesel fuel per year, emitting more than 194,000 tonnes of CO₂ (Sandwell, Gibson and Fohgrub 2022), and diesel generators were common in the camps in Kenya and Rwanda. Therefore, policy statements such as the one above should be treated with a note of

caution as the majority of humanitarian operations still use fossil fuels as their main source of energy (Gibson 2020). During my interviews with humanitarians working in the camps the presence of diesel generators was often mentioned, and many refugees and humanitarian staff members commented on how solar solutions might be possible. During my trips within the camps I had also seen several examples of solar panels lighting buildings.

Some places in other camps already have some solar power and that would be good for us. As long as the engineers say it is reliable, we can have it. I think in other places they have both diesel and solar together – like a mix – so if anything is going wrong with the solar then the diesel can work. That would be very good for us here, to have a back-up always like now [with the current back-up generator]. And with solar it would be even cheaper I think. We could use solar here, easily, for the water pumping would be best. We are using so much diesel now and it would be better with solar. I don't know how much the diesel is costing, but it will be a lot, someone in UNHCR is paying for that and it must be a lot because we are needing a lot to keep pumping. (Refugee living in Rwanda)

Interviewees in both Kenya and Rwanda talked about how renewables were 'good', specifically linking this to the properties of solar lanterns and panels, which meant they are 'clean' in the sense of not physically dirty or noisy. Interviewees often went beyond this conception of 'goodness' and linked solar energy to being 'better': a source of happiness and pride. Partly this view emerged from the physical and aesthetic features of solar energy: the blue panels, the reflective surfaces and the 'beauty' of solar objects. In fact many interviewees commented on the colour of solar technologies: including red d.light lanterns; blue UNHCR lanterns; silver, reflective, shiny panels; and the yellow of the Little Sun lanterns. However, as the interviewee in the quote below states, valuing these technologies can go beyond pride in the appearance of the technologies – linking them to the concept of development.

They are so good, the renewables. I am liking them. If that was a generator, the man would not pay the boy, because generators are already so dirty, why would you clean them? But the panels, they are beautiful so you want to keep them beautiful. It is pride, but also presentation. Saying, 'Here, I have this, it is something valuable and technology', it is really saying, 'I have a future, something nice and good in my life, I live in a hut in the desert, but I have this and I am connected'. Pride – or something better than pride – happiness, future, dreaming, value in this panel – this brings a very good element to life. Something so much better than without. That is what renewables can bring: something better than without. I am glad the refugees are having this, and we in Kenya are having this. That is why renewables are good. (Energy practitioner living in Kenya)

Descriptions linking the provision of solar energy to hopes for the future were commonly put forward, with many interviewees commenting on how solar technologies would offer them a higher quality of life. Part of this idea is likely to come from the fact that solar panels and systems are newer – in the sense that they are recently arrived, innovative and ‘just off the shelf’ products compared with older diesel generators and other energy products that have been in the camps for some time. As a result these newer products are seen to offer progress and value. From a certain viewpoint these opinions can be seen as expressions of modernity. However, here it is important to note that within the refugee families I spoke to, ideas of having a better life were strongly linked to the *usefulness* of energy. It was simply not enough to have a beautiful new lantern; interviewees also stressed that there was value in the *use* of these products. As the quote above demonstrates, renewables can offer a vision of progress – but one which is directly useful to households and improves life in a concrete, connected way.

Oh they [renewables] are so good. Not everyone [in the camps] has them, but some have the lanterns and the panels. Some even have the thingy ... systems with the panel and the light and the TV [solar home systems]. They are cheap overall and people love them – they are blue and pretty and you can see them and they shine. The coffee shop I go to [in the camp] has a system [SHS] and the boy there cleans the panel every day to make it shine at the entrance ... it is like, if the panel is shining and clean it is the sign the shop is open for coffee. I always go to that place over the others, because the man there is nice and he pays the boy to clean the panel even though it doesn't need it every day. (Energy practitioner living in Rwanda)

In summary, the provision of solar solutions in refugee camps was generally viewed as positive, and many humanitarians and refugees supported the transition to sustainable solutions. It is likely that in the years ahead we will see a rapid expansion of solar provision in refugee camps (Beath et al. 2023; GPA 2022).

Supply Gaps: Absent, Accidental and Intermittent Provision

In considering the provision of energy by humanitarian agencies we must also consider the lack of provision and the impact this has on refugee communities. As earlier chapters have explored, refugees have not been provided with substantial electricity access in their homes or for their businesses. Within public facilities there were also considerable gaps in energy provision, which means that refugees often do not have access to energy in community buildings, religious spaces, playgrounds or WASH facilities. The impact of this lack of access was substantial, with many

interviewees expressing how they were not able to use these spaces fully and feeling distressed that they were not able to access energy. Gaps were often created by institutional inaction on energy, with humanitarian providers taking limited responsibility for the electrification of refugee spaces while many operational spaces – such as the offices and compounds of humanitarians – were powered. The gaps in provision were often political in nature, resulting from perceived institutional remits and organisational decisions about which spaces deserve energy and which do not. This suggests there is a politics of energy provision within humanitarian organisations, and that value judgements are being made in deciding which parts of refugee camps should be electrified. Clearly refugee homes, businesses and community facilities were not valued and therefore often remained without power. In the case of operational spaces energy was often provided but was still not delivered effectively.

Provision was absent (where energy was not provided or informally provided by actors other than humanitarian organisations), accidental (whereby power was accessed without the knowledge or support of humanitarian systems) or intermittent (where energy was provided in an inconsistent manner by the humanitarian system). Examples of all these types of gaps in provision were present in the camps in Kenya and Rwanda – and also in many of the refugee camps I have visited in Ethiopia, Uganda, Bangladesh and Jordan. The informality and limits of humanitarian energy provision are well documented and evidenced by the fact that over 94 per cent of displaced people in camps lack access to electricity (Grafham, 2022).

Refugees viewed the humanitarian provision of energy as inadequate. Interviewees commented that the supply of firewood, for example, was never enough to cook meals. As an example, quantitative research on this topic has suggested that in Rwanda over 60 per cent of refugee households were skipping meals due to fuel shortages and over 42 per cent were selling their food rations in exchange for fuel (Practical Action 2020). Similarly, most households I interviewed had not received any support on household electricity, and those who had had only received a small solar lantern that was not sufficient to meet their power needs. The under-provision of energy services by humanitarian organisations has resulted in the majority of families relying on refugee enterprises and buying their energy products and services in the markets in the camps. In addition, many intervention projects are not working to supply useful energy products or services to refugee households or businesses (Grafham 2020).

During my research the issue of informality, whereby energy was accessed through a number of alternative or informal ways, was frequently raised. The story below on informal connections highlights the variety of informal access methods. During one visit to a camp in Rwanda,

I stumbled across a small hairdressing salon with a solar lantern charging on the roof. While the shop was open the manager was not close by, so one of the young people nearby described how the salon worked and showed me the electricity connections in the shop. In this case the entrepreneur was informally connected to the grid and using power to connect his hairdressing business.

It stays on, the clippers, because it is plugged in. We connect to the panel on the roof. And also through the cable. The cable is working best. Giving energy for the machines. They gave the lamp [the solar lantern] and told [him] to use [it] for the clippers. But it does not power them. So I use the cable and so is the good connection. The cable we found outside the wall [of the camp] and we just added to it. It is not from UNHCR, so we don't tell them too much about it. We just link in and connect. No-one asks about this. Just about hairdressing. So we use it quietly. (Refugee living in Rwanda)

We talked some more about the types of styles of hairdressing offered and the prices the salon charged before returning to the topic of electricity. As a solar lantern of the type charging on the roof could not be used to power the clippers, I was interested in where the power actually came from. After some investigation I discovered that the salon was connected to an electricity cable, which ran across the camp border into a nearby house and pylon – and was in fact connected to the local grid. Talking further with some of the local business owners it became clear that the shop owner had built the salon here in order to get an electricity location, and then later on an energy programme in the camp had distributed free lanterns for electricity. As grid connections within the camp to households and businesses are not strictly allowed by the national energy provider, I did not return to interview the shop manager to avoid drawing attention to his informal connection. The other business owners explained to me that talking about this topic might make him worried that his connection would be cut.

This story demonstrates some of the informal connections made by entrepreneurs in the camps. In this case, a UNHCR-funded programme had distributed solar lanterns for free to business owners – many of whom could not use the lanterns for their business as they only provided basic lighting and did not include charging or powering technologies. Despite this, the salon was characterised as a 'solar salon', which was held up as a successful example of UNHCR providing energy to the community. While it did seem as if the lantern was being used to light the space in the evenings, the shop had also installed light bulbs connected to the grid and so it was unlikely that the lantern was providing much light. There were many examples of such businesses within the camps that were connected to humanitarian projects and systems but were often also securing their own energy access.

The insignificance and inappropriateness of energy projects in the camps were often commented on by refugee interviewees, who when asked directly about the possible benefits of humanitarian-led interventions suggested that they were not always helpful. For example, interviewees would show me disused cookstoves or solar lanterns that had been distributed by UNHCR and highlight how these technologies did not meet their needs. In many cases energy interventions had simply not reached households and so provision from projects had had very little effect on them, as many families had not been included in the beneficiary populations that received distributed electrical products. Particularly for enterprises in the camps, many humanitarian projects were immaterial. When a business had benefited from humanitarian support it was often a secondary link to energy (such as businesses being able to participate in cash schemes and then having more income to spend on energy) rather than as the result of direct assistance on energy from humanitarian actors.

While the story above suggests a negative view of agencies in the camp, there were also positive stories of connections – especially in cases where agencies and NGOs had been able to share energy resources. The story below highlights an example of this, where power sharing can also take the form of informal exchange of ‘left-over’ or surplus energy goods that have been put to use in another context. While many of the business owners in the camps had specifically purchased technologies to use for their business, other entrepreneurs seemed to have informally come by a technology and built a business around it. For example, in the story below about a solar cinema in Kalobeyei, the business owner there ‘found’ a ‘free’ solar panel and this was the start of his idea to make a TV shop. In the case of this solar cinema, electricity was used to power a TV, fan and lighting for a cinema. The business owner then charged customers a small amount to watch a film or show (around £0.50). These types of informal-energy entrepreneurs were common within the camps and were often not formally supported by UN or aid systems.

One of the women I met in Kalobeyei recommended I see the local cinema, so I walked with her across the settlement to a far corner – where there was a solar cinema playing music loudly and screening different shows and films throughout the day. I was able to have a short interview with the man who ran it, but he was very busy with customers and could not spare a lot of time to talk with me. An older man who clearly had a lot of experience running businesses in the camp, I asked him how he got the panels there and why:

We arrived, there was very little, really nothing. We needed some TV, so I am working with the other men to find the materials [knocks on walls of structure] and we build this. The panels come for free. I don’t know how the

energy arrived, a man bought them, gave for free. We thought they were broken but one of the boys was playing [with the panels] and found they were working. So we use them now. They power the screen, the music, the lights. Soon I will buy another fan to keep us cool. I have [a] battery – for charging [taps the phones in the box] and for night. Some men are coming at night, but not ones with wives. Those might stay at home. (Refugee living in Kalobeyei Kenya)

Following this interaction, I asked the UNHCR representatives involved with the development of Kalobeyei whether this was one of the projects they or NGO partners had supported. Surprisingly, most of them had not heard of the cinema but explained that SNV and one of the other large NGOs building the schools had a surplus of solar panels, so the panels on the cinema might have come from there.

This story highlights a positive example of when UN-funded projects have a surplus of resources and share this surplus with the community – as the panels were probably donated to the community by the local NGO, who already had enough for the school's needs, and then the cinema owner was able to make a business out of this. It is unlikely that the panels were stolen as they still had their ID numbers on and were highly visible in the space of the camp. In this case institutional involvement in the provision of energy to refugees can be said to be accidental: the agencies and NGOs involved were not really aware of the provision of solar panels to this business.

Unintentional provision of electricity by humanitarian organisations was common. For example, refugees would informally connect to UNHCR generators and 'borrow' power from operational sources. Refugees also reported spending extra time in operational and NGO spaces so that they could charge their phones while there. This type of provision can be characterised as accidental as the majority of humanitarians were unaware of, or unconcerned with, such connections. Providing energy in this form was not a conscious decision by humanitarian organisations, and many agencies did not know that people in the camps accessed electricity in this way. Occasionally access would be provided as an act of kindness by an individual. In a couple of cases, humanitarian organisations had sold old, broken generators to refugees for parts: they did not realise the value of these technologies, which were repaired and put to work as mini-grid businesses. This type of unintentional provision suggests that humanitarian staff did not necessarily know the value of such connections and technologies, or how they were being put to use in the camps.

Now we turn to consider the issue of intermittent provision of energy. Intermittency in a technical sense often refers to the fact that electrical connections are provided but electricity is not flowing; it also denotes

where demand for energy exceeds the amount of energy supplied (Sorensen 2014). I use intermittency in both these senses, but also consider issues of spatial intermittency (where power is provided in some locations and not others) and institutional intermittency (where organisations only take partial responsibility for the provision of energy). One of the often-cited disadvantages of solar power is that it produces ‘intermittent’ power because it is not always sunny. However, intermittency in refugee camps is often not caused by technological limitations but by institutional failings. Diesel generators and solar systems do of course break down and need repairing or replacing, but this is true of almost all technologies. A lack of electricity in many spaces was caused by humanitarian operations failing to repair or replace technologies – or, in a great number of cases, failing to provide any electricity connections in the first place. In this way problems with energy can be said to face institutional intermittency rather than technical intermittency, as it is often a lack of responsibility or ownership that prevents power from being available for communal services.

Institutional intermittency was both an unintentional act (organisations being too disorganised and resource-constrained to be able to power all community facilities) and an intentional one (power for operations was prioritised over energy for refugee homes, businesses and communities). While this may seem to make sense in a resource-constrained environment where money is not readily available, in situations where some needs might often be seen as more pressing than others there was little evidence of limited budgets to spend on energy. In fact, in one example, several millions of dollars from a donor were made available for solarising playgrounds while health clinics in other camps in Rwanda did not have power (UNHCR 2017a). This raises questions around who is making decisions about energy priorities in the camps and how.

The cases presented above highlight that sometimes humanitarian provision of energy in the camps can be largely irrelevant to refugee lives; sometimes power arrives accidentally or not at all, occasionally the impacts of humanitarian intervention seem to have unexpected effects on communities and the intermittent provision of energy had a number of complicated impacts. These stories paint a negative picture of humanitarian energy interventions, and further research might uncover evidence to outline the impacts of such projects. However, the point I would like to make is about intentionality. In all of the examples above, and the earlier evidence in this chapter, few concerted or considered efforts by agencies or implementing partners on energy could be found. We can therefore question how planned or intentional these programmes are, as much of the evidence seems to point towards limited attention paid to energy. This suggests that energy within refugee camps is not prioritised or provided

comprehensively by agencies, NGOs or humanitarian partners. The motivations and judgements underpinning this lack of prioritisation and the choices being made on energy provision will be considered in the coming pages.

Energy Provision and Its Discontents

The Value of Power and Value Judgements

How and why is energy valuable to us? On a day-to-day basis the importance of energy can often be forgotten, but in its absence we notice how small our lives become without it. Energy sources are often considered secondary to the benefits they bring. For example, we value not necessarily the electricity that powers our kettle but rather the hot cup of tea that comes from having boiling water, and having a mobile phone is a visible benefit whereas the power needed to charge it is ‘invisible’. For this reason practitioners often highlight the fact that energy ‘enables’, and that access to energy technologies and the use of those technologies are thoroughly intertwined (Practical Action 2019). For example, the interviewee cited below suggests how energy becomes a linchpin that links basic human needs with a higher quality of life. In this excerpt, the interviewee suggests that energy is often invisible because we are focused on the benefits it brings – such as a hot shower, a good cup of tea, the ability to cook our dinner and watch TV – rather than the energy source or technology underpinning the uses of energy.

Energy is underneath. It underpins so much of human activity; we need to see it as cross-cutting and embedded within people’s lives ... it has gone ignored for so long by the humanitarian system that it needs to ‘invent a new narrative’ to succeed in the highly competitive world of humanitarianism. We see it everywhere ... energy, electricity, firewood, batteries, sticks for lighting, and the generators. And then I am telling people ‘this is important’ and they are too busy typing on the computer or texting on the phone to listen. I say, ‘That is using the energy too, you know’, and they roll their eyes at me. I shout and say ‘listen’ but no-one is caring: energy for me is not the same as energy for them. They are teeth sucking, and I am thinking of people in the dark.

You see, this is underpinning everything. If you have no battery, you have no torch. If you have no panel, you have no phone charging business. If you have no diesel, you have no lights or fan. If you have no wood, you have no food. We could make all the lists and show them [the camp operators] but do you think they would listen? I am not sure, I think they would say, ‘See, they have some energy already, it should be enough, it is not our responsibility, we do not have the money’. Tsk, I am getting angry again. Come, have tea

with me ... [laughs loudly] WAIT, how will we have tea with no kettle?! You see, it [energy] is in everything we do. Luckily, we have a kettle. (Energy practitioner living in Kenya)

The 'value' of energy in the camps was a complicated construction. As well as the social and economic values of energy there were also multiple views on why energy mattered, focusing on its perceived benefits and worth. Here we can ask ourselves a challenging question: how much energy is needed for 'quality of life'? While many would consider the answer to this to be subjective, UNHCR have outlined the minimum amount of electricity that is needed for refugees 'to satisfy their energy needs in a sustainable manner, without fear or risks to their health, well-being and personal security' (UNHCR 2019a: 4). UNHCR's recent energy strategy outlines a clear minimum level of electricity access for refugees (although these levels are rarely met). The strategy states they are seeking to ensure that 'refugees have access to 200 Wh/ household/ day, allowing for basic lighting and connectivity' (UNHCR 2019a: 19).

To understand these figures, this is considerably less energy than is required for certain appliances – for example, a standard light bulb is 60 watts whereas a kettle is 1,800 watts. Due to increasingly efficient appliances charging a smartphone is a lot less (between 2.5 and 5 watts if charged efficiently) and a standard phone charger 7 watts, while a laptop is between 80 watts and 250 watts depending on the make and type. As these figures highlight, only providing 200 Wh (watt hours) a day requires serious choices about which appliances would receive power and which would not. Other standard western appliances would not be able to be considered with such minimal access to electricity – for example, an electric stove (2,000 W), desktop computer (450 W), fridge (220 W), hairdryer (2,000 W) or washing machine (500 W). Generally, 200 watt hours of electricity equates to being able to power one or two light bulbs for a few hours and being able to charge a phone once a day.

We can question whether this level of energy is an appropriate amount to meet 'refugees' energy needs, prioritizing renewable energy technologies, [and] enhancing livelihood opportunities' (UNHCR 2019a: 19). However, it is important to note that access levels provided by humanitarian organisations in Rwanda and Kenya are currently far from meeting the minimum standard of 200 Wh a day for every household, with many refugees not supported with electricity access at all. The provision of basic solar lanterns to some households in the Rwandan camps and Kakuma has been selective and has not reached all households, and in any case many of the basic lanterns so far provided do not amount to the level stated by UNHCR as the minimum. Even the newest model of the Sun Bell Bright

lantern included in some humanitarian responses as a core relief item is only 5 watts (Sun Bell 2019).

UNHCR's target of 200 Wh is equivalent to tier 2 in the World Bank's Multi-Tier Framework for energy access. According to the Bank's standards, this should include enough power for 'general lighting and phone charging and television and a fan', be equivalent to more than 73 kWh (kilowatt hours) of annual consumption per household and provide a minimum of two hours of power per evening and an additional four hours in the daytime (ESMAP 2015: 6 and 77). While this yearly figure is technically equivalent to the 200 Wh per household per day figure chosen in the UNHCR Energy Strategy, the hours per day or night and the annual consumption are not mentioned within the UNHCR document – perhaps deliberately, in order to avoid questions about how to achieve large-scale electricity supply in refugee camps. As is evidenced throughout this book, the levels of access provided by humanitarian organisations in refugee camps for households in Rwanda and Kenya are very far from these amounts of power.

I have included these figures here to draw attention to two elements: firstly, the energy needed to ensure quality of life for refugees has been politically determined by UNHCR as 200 Wh per day per household. This strategy was produced without consultation with refugees and is widely acknowledged to be currently unachievable using existing humanitarian practices. Indeed, when I asked one of the humanitarian practitioners involved in the production of these guidelines his opinion, he responded:

It isn't 200 Watt hours anyway, just 200 watts. Just enough to switch things on and off, not to have multiple hours of power. They [the refugees] will never get 6 hours of power a day. We can't afford that and won't do it. The governments don't recognise tier 1 as energy access, so we had to choose tier 2. But it will never happen. It is just a number to keep the World Bank and the donors happy. No-one in UNHCR has any intention of making that happen. Most don't even know about the figure. It is buried in some energy strategy no-one has even read. At some point in the future someone will take down that PDF and there won't even be a record that it was a thing. Good luck trying to get anyone to enforce it. UNHCR won't ever be told what to do. We just decide, they put a number in a document, then move on, regardless of the realities. (Humanitarian practitioner in Addis Ababa, Ethiopia)

This statement highlights the political nature of decision-making in UN organisations. In this case as many national governments (such as the Government of Rwanda) do not accept tier 1 as basic energy access, they set a minimum standard for development or humanitarian programmes that offer tier 2-level household power or above. As a result humanitarian

organisations are ‘forced’ to present higher levels of power to aim for in their strategies, but, in reality, may have little intention of implementing such standards. This demonstrates one specific example of how the politics of life is operating in refugee camps, and shows the role both national governments and international organisations like UNHCR have in deciding on the quality of life for refugees.

I also draw attention to these standards because of the political nature of the value judgement on what constitutes a minimum acceptable level of energy access. The World Bank and other organisations often refuse to state what level of access counts as ‘modern’ access: is it tier 2 or higher levels of electricity that can power multiple appliances, such as tiers 4 and 5 – which are generally the levels of power available in the global north. Rather, the Bank’s Multi-Tier Framework offers a relatively neutral way of measuring access without proposing specific targets. The UNHCR strategy, however, does chose tier 2 as its minimum standard. This represents a political value judgement on how much energy is enough. In this way the strategy portrays a vision that UNHCR is providing ‘modern’ energy for refugees, whereas really tier 2 is just a couple of light bulbs and is very far from what most people would consider an acceptable level of power. This is a debate which rages on in the energy-access sector (Pelz, Pachauri and Groh 2018), with many authors agreeing that ‘the middle tiers are misleadingly low’ and that ‘73 kWh/year is barely enough to power lights and a phone charger, while a single family refrigerator needs 300-500 kWh’ (Moss 2017: 1). However, this debate does not seem to have reached the humanitarian sector yet, as many humanitarians I spoke to were of the opinion that tier 2 access was more than enough for refugees.

What is important for energy is the use – not the technical specifications. We have basic stuff or premium kits – we sell functionality not technology. You need 10 hours of power for your home and restaurant a day – here, have three, four lights, torch, radio, and maybe a TV, and the battery and connector. Maybe that is 50-60 w panel, and over 200 watt hours. But it is the use that matters, the functionality. People will pay a lot for that, even if they have to do it over time. (Humanitarian worker living in Rwanda)

I present these arguments to highlight how opinions on energy access in refugee camps matter in terms of the politics of life in humanitarian settings. In the example provided above on UNHCR’s energy strategy, political choices are being made about what counts as access to energy, and these choices are often made without input from refugee communities. While UNHCR provides one example of an institutional decision on energy, many other organisations such as WFP and FAO (the UN’s Food and Agriculture Organization) also have similar targets and strategies for cooking needs in humanitarian settings. We can use such examples

to open up the discussion on whose knowledge matters in the politics of living: who is making which choices and how does this matter for energy access? As will be further evidenced in the sections below, refugees are often securing energy for themselves rather than waiting for the humanitarian provision of services. And, as such, whether or not UNHCR decide that 200 Wh is an appropriate amount may be relatively immaterial to the lived experience of many refugee families. However, this discussion is included here to understand the types of political judgements being made within all parts of the humanitarian energy system.

Value judgements underpin the politics of living in refugee camps. This is evident in both humanitarian inaction on energy and the written strategy documents produced by agencies. In this chapter I have tried to contrast what energy means to refugee families with the minimum standards imposed on communities. In the case of UNHCR's energy strategy, a concrete figure of 200 Wh per day per family is provided to establish this and provide a narrative that energy provision should be for protection needs. Global organisations are trying to change this narrative and ensure that humanitarian commitments on energy are progressive and ambitious (GPA 2022; UNITAR 2019). However, the reality is very different on the ground, where delivery of services is still focused on basic provision. Independent access to energy services by refugee communities is a political issue, and may undermine the current 'protect and provide' mentality of the humanitarian sector. Independent access challenges the self-reliance narrative put forward by UNHCR and other agencies: in terms of energy, refugees are already largely independent and self-reliant – so encouraging them to be more autonomous would be difficult, if not redundant.

There are disparities between the perceptions and values of refugees themselves and of the humanitarian organisations that support them, and in the levels of knowledge and experience on energy between these two communities. Refugees inherently valued energy as a way of improving their quality of life and were spending considerable amounts on providing it for themselves. Yet many humanitarian practitioners did not recognise either the existence or value of energy in these spaces. The politics of perception is important for energy in refugee spaces because without an accurate understanding of energy in refugee camps, humanitarian organisations will not be able to support households in improving their quality of life. Power levels, both for physical electricity and in terms of social power dynamics, were unequal in the camps, with many humanitarian organisations perceived as not having a role in energy provision at all. Choices are being made on how people access energy and how much energy support refugees receive. In many cases these choices are selective and result in inequality in access.

We can question why that is and which value judgements and practical reasons sit behind the lack of energy access in refugee settings. This chapter so far has described some opinions on how energy is provided in camps. We will now turn to examine how this knowledge is reflected in humanitarian response and political choices on energy.

The Politics of Knowledge and Choices on Energy

Political perceptions on energy knowledge within refugee camps was contested. During fieldwork many international workers and NGO staff members within the camps claimed that ‘refugees know nothing about energy’. For example, one staff member – a humanitarian practitioner in Kigali, Rwanda – stated, ‘there are no renewables here [in the camps]’, and became confused and irritated when shown photos or examples of solar home systems and lanterns. Some of the camp authorities took a deliberate line that ‘there is no energy here’ (in the camps) in order to gain more funding and support to improve energy access. Field workers from UNHCR, for example, often stuck closely to the narrative of limited energy access and the importance of creating new forms of self-reliance in the camps, without any acknowledgement that many households were already securing and paying for their own energy.

As the quotes below demonstrate, some specific types of knowledge on energy are valued within the camps. Knowledge on how to secure more funding for energy programmes in the camps, on climate change and the self-reliance of refugees, and on the potential for cost savings for the humanitarian system was particularly highly prized. This knowledge focused on donor-driven priorities and often used phrases such as ‘outcome statements’ and ‘doing sustainability’ instead of talking about people obtaining access to electricity. In many ways this knowledge is not actually about energy or its benefits at all; it is about how to sustain the humanitarian system with increased funding and how to ensure that donor priorities and ways of working are met.

Part of my research involved engaging with global policy-makers and practitioners during workshops and events in European and other western contexts. During these events I was often able to conduct short interviews with global interviewees in the margins of discussions, or ask specific follow-up questions about something mentioned in the workshops. The two sets of quotes below are from just such occasions, where I was able to ask two officials from UNHCR about their perspective on energy in refugee homes. Both interviewees had worked at the field level in camps before moving to more senior global-advocacy and donor-facing jobs. When I asked about local knowledge on energy in the camps, this produced interesting answers:

Site-specific analysis with UNHCR camp managers on energy can be higgledy-piggledy. You go there, you ask about energy, and they say, ‘No, there are no renewables here’. Then you look: forty solar home systems. Later you ask, ‘Well what about all these?’, and they say, ‘Oh, people bought [them] themselves, so they don’t count, we didn’t provide them’. All the time while talking about how refugees need to become self-sufficient and less of a burden on the humanitarian system. Energy and people’s use of energy is just not understood by many people – in the camps, certainly not. The global level can inform the wider system knowledge, so we can test our outcome statements. But when we ask in the field, they roll their eyes and ask if this means another day in the camp, asking people there our questions. When people face a problem in the camps with their new renewable energy, they go back to their old ways of doing things. So, sustainability is difficult. People are capable of buying better alternatives, but when things get difficult with energy they give up. (Energy practitioner in Kigali, Rwanda)

What is wisdom for a refugee? We are taking a very academic approach but we need to also think about what that means on the ground. The first type of energy they need is lighting. I analyse then I decide. You don’t need to scatter energy: just decide a way forward. You decide for them, the people at the bottom of the pyramid. The community [refugees] plays a big role for NGO sustainability: you need to keep them going so they can feed you [humanitarian organisations]. We need to work on how the community understands what we are going to bring them. We should come up with the things and programmes for them: it is essential for the success of the project. (Humanitarian practitioner in Nairobi, Kenya)

These comments were typical of many senior and international actors in the humanitarian energy space, with many suggesting that global knowledge was more important than field-level information. As evidenced in these comments, ‘practical’ knowledge (knowledge directly about energy systems, how much energy costs and where it is available, how it is used and what it means to people within the camps) did not seem to be valued by the camp authorities or staff members within the camps. Only some types of knowledge about particular household energy sources mattered. As seen above, one interviewee suggested that if people in the camps had bought solar home systems themselves this did not ‘count’, because the humanitarian system did not provide them for refugees. This suggests that there is a mind-set that only humanitarian aid provided through a traditional donation model can be used to solve the problem of household energy. It is an attitude that was common among NGO staff and field workers, who propagated a narrative of beneficiaries as powerless people who could not assume responsibility for their own energy needs as they do not know about energy or understand it. A particularly stark example of this is provided in the question ‘What is wisdom for a refugee?’, as

cited in the quote above. This interviewee then went on to explain how he knows much ‘more’ about energy than the refugees, and so he and his institution should be the ones to ‘decide a way forward’. We can critically question what this implies about different forms of knowledge on energy use and whose opinions matter. Clearly in the case of these interviewees, knowledge from humanitarian practitioners was more important than information from refugees themselves.

There was also considerable misinformation and confusion on energy in the camps, particularly among the camp authorities and NGO staff workers. While energy is quite a technical subject, many staff members did not understand the difference between energy (which is an overarching, umbrella term for anything that can be made rapidly hot or cold or switch on or off, and can include sources of fuel and electricity as well as appliances and supporter objects) and electricity (which is focused on power sources and electrical appliances).

At several points during my research I was able to ask field-level humanitarian practitioners about energy and electricity. In one such case I interviewed a male staff member working for an implementing partner of UNHCR in Kakuma. When I asked specifically about electricity sources and uses for refugee homes in the camp, he commented that ‘for electricity, our biggest space is the stove production centre’, so we went to visit it. He stated, ‘We produce a lot of our own electricity – we will show you the site; the women there are making it themselves’. However, the site turned out to be producing cookstoves manually, and had no electricity access at all. The centre was producing cookstoves and some pots, and had a small agricultural plot attached where vegetables were being grown and crickets harvested. It was very interesting but had nothing to do with electricity, and did not even have basic lighting available. When I asked the implementing-partner staff member about it, he replied: ‘This is energy, it is the biggest type of energy we do. Every day we are making the stoves here’. This opened up a discussion about the difference between energy and electricity. We agreed the centre was very interesting but then started discussing why it did not have an electricity connection. The staff member commented on electricity: ‘Oh, like power for the computer: this is not energy for refugees. Energy for refugees means cooking stoves and pots like the ones we make here. They do not have computers or phones so they are not needing this type of power for computers’.

There was a considerable difference in the types of knowledge present on energy in refugee settings in Rwanda and Kenya: while refugees themselves are largely determining their own energy-access needs, staff and international policy-makers demonstrate a considerable lack of knowledge on the direct energy situations in the camps. Staff narratives focused much more on donor programming and humanitarian

aid initiatives. This can lead us to question whether the most informed people on energy (refugees) are therefore being consulted and involved in decision-making. Is their knowledge being embedded within humanitarian responses on energy, and what are the implications of misinformation and lack of relevant knowledge being used in policy-making and intervention designs?

Here the politics of humanitarianism (Fassin 2007) becomes visible, with humanitarians deciding which knowledge matters and only valuing certain opinions. In some cases agency and NGO interviewees would also stick to their own narrative even when presented with alternative information that suggested their knowledge about energy was not correct. This highlights how the politics of life is linked to power relations between communities, and that many refugee voices were not valued in discussions on energy. Humanitarians were repeatedly labelled ‘experts’ even when they had little energy background and, in many cases, contributed to the misinformation and disorganisation of energy provision in the camps. In this chapter I have suggested that in many cases refugees’ knowledge about the levels of energy they require and use is considerably better than that of the humanitarian practitioners interviewed. This leads us to question not just who knows about energy in refugee camps but also who is responsible for providing energy access. Who, after all, has power – literally and figuratively – within the camps? Inequality is one of the core components of the politics of life: some actors will always have more power and control of resources than others (Feldman 2012). As Didier Fassin suggests, ‘the politics of life, then, is not only a question of governmentality and technologies, but also of meaning and values ... [it represents] a production of inequalities’ (Fassin 2009: 44). In the case of energy in refugee camps, access to power is literal as well as political. Access to electricity is inequitable: many field workers and staff had smartphones and high levels of electricity access, while households within the camps had comparatively less than this.

These inequalities were recognised by many refugees and staff interviewees throughout the fieldwork. For example, in the story below one interviewee drew particular attention to the difference between energy ‘for us’ and ‘for them’ – remarking on humanitarian workers within the camps who viewed energy as essential for their own needs (to work using a computer in air-conditioned offices) while questioning the value of energy for refugees (saying it was not an immediate relief item, so ‘why do they need it?’). One of the humanitarian-agency staff members I met was keen to discuss the differences between energy for refugees and energy for humanitarian staff members. He spoke with passion about energy and his upbringing in rural Kenya. In the margins of an international event, we sat discussing who energy is for:

Energy is somehow my job now. My job [description] does not say ‘energy’ in it anywhere, but I am trying to do it and I am known as ‘the energy guy’ – like I can ‘do’ all the energy by myself, I will just plug in it and BOOMMM! [loud gesture and laughing]. So energy means more to me than it does to the [humanitarian] operation, it is more important for me and to me. But I am also meaning that they [the humanitarian operation] do not think energy is as important for refugees as it is for them. They think, ‘My phone is so important, I must have my computer, if the air con is off I cannot do anything’ and if there is no power, they are getting very angry with me and saying, ‘Fix it now, or things will happen’. It is everything for them really. But they also think it is not important for the people in the camps, people in the villages, in the sections – ‘It is not an essential item, why do they need it?’ they say. ‘Why do you?’ I always ask them back [laughs]. I am not a very popular person for asking this question. (Humanitarian energy worker in Nairobi, Kenya)

This interviewee was very well informed about energy needs in the camps and was concerned with the issue of inequality, drawing attention to the question of why some people perceive energy as more important for themselves than for others. He provocatively asked whether staff members think they deserve a higher quality of life than refugees, and reflected on what this says about the structure of the humanitarian system. The inequalities implied within the exchange of ‘I need electricity but refugees don’t’ was common in the camps, and when asked about energy uses many practitioners replied that there were no electricity sources used in the camps and that all the refugees relied on firewood for cooking. This was empirically inaccurate. When challenged interviewees were often dismissive and critical of refugee households, suggesting that if refugees are ‘rich enough’ to afford electricity then they should not be refugees.

The opinions of humanitarians have been selectively cited in this chapter, and it should be noted that many humanitarian energy specialists do not share these views. However, the types of comments included here were common within my interviews and exchanges. Such statements often reveal whose lives are valued in terms of energy: refugees or humanitarians. Fassin suggests we can understand such values by investigating ‘the political disorder of the world: the inequality of lives’ (Fassin 2007: 512). For energy access, lives are assessed in terms of who is valued (which people are deemed relevant, respected, worthwhile and deserving of energy) and who is not (people who are deemed unimportant, unessential, inconsequential and undeserving of energy). Value judgements are being made on who deserves energy and who does not. A clear pattern emerged in this research whereby people deemed ‘beneficiaries’ were relegated to the latter category of those undeserving of modern levels of energy access,

while other communities (local workers and international staff) were classed as needing energy.

One of the refugees in the camp also drew attention to this issue, as described in the quote below, suggesting that institutions within the camps have electricity but they will not extend this to households. Referring to this level of provision as ‘big’ electricity (in this case meaning national-grid or grid-equivalent levels of power) the interviewee was angry about the differences between electricity in her home and in staff homes and nearby villages. She suggested that laziness was the reason: that the staff members would not connect the camp because it would be too much work for them.

There is the big electricity, but it is not for us [gestures overhead at the grid connected wires]. They will not do it [the institutions responsible for energy in the camps]. It would be so convenient to have electricity in our homes. Some could even pay for it. But they will not do it because it will be too much work for them. They go home in the evenings when it is getting dark [most of the camps have an informal curfew of 5–6pm] and they do not stay here in the night when it is dark. What is there to do then? They go to their homes with electricity and they relax, they watch their DVDs and listen to their music. But they do not want to do the work to let us have that too. (Refugee living in Rwanda)

The theme of anger and discontent about energy within the camps was present in many of the interviews I conducted. During a visit to Kalobeyei, I met a South Sudanese woman who invited me into her home to discuss solar lanterns. She mentioned a number of issues she was angry about: limited engagement from UNHCR staff despite their logo being on the walls of her house, the inadequacy of the lantern they had provided her with and how humanitarian staff were not listening to her. Her statement that UNHCR staff do not ‘know what energy women need’ was categorical and well evidenced in the examples she provided. After some initial exchanges she commented:

You are welcome here, because you know about the lights. They are so good for us, and now we have lights in our home. The UNHCR people, they don’t care about this. I am not inviting them into my house, they have the name on the walls and that is enough. We used to have the blue lantern, my neighbour still has. But I am not liking this as it has that name on it and lots of silly things. These little ones [gestures to lights hanging on roof] are very good. We leave them there on the top all the time and they are lighting the whole area inside. It is just enough for us. I am very happy we have them, and now you can sit inside with me and talk about anything. The lights came with the house. They were bringing us here and said it would be good to sit under the new sun, in this new settlement. The old place [Kakuma] was too crowded

and the children did not have space to play near the house. I wanted to come and I saw all the space, and the lights, and so I moved here with my little children. I have good English and studied in the schools, all the schools in the other camp [Kakuma], because I know you need to read, always to read everything. To do the forms, and to choose to come here, you must be able to read. And in the night you can read now with the lights. (Refugee living in Kenya)

While this interviewee was clear about the uses of energy and why it was useful for her, in many humanitarian discussions the importance of energy was reduced to one or two key elements – for example, the use of sustainable energy sources to reduce tree cutting and deforestation or the provision of solar streetlights to protect women and girls. While safety of movement at night was mentioned occasionally by refugees during my research, it was almost always in the context of physical safety from accidents rather than because of violence against women and girls (VAWG). While gender-based and sexual violence is a serious issue many current studies now do not support the argument that firewood collection presents one of the main risks for violence, as the majority of gender-based violence is carried out by partners and family members in homes: ‘Most evaluations conclude that the root causes of VAWG are complex and cannot be addressed by the distribution of energy products. Findings suggest that firewood collection provides a convenient context or location for rape, but should not be viewed as its cause’ (Parke and Fraser 2015: 2–3). Similarly, many narratives on humanitarian cooking suggest that clean cookstoves can reduce violence; however, this is likely to be a technological panacea developed by humanitarian agencies (Abdelnour and Saeed 2014). While solar lanterns and household lighting can be useful for enabling women and families to feel safer, many interviewees in the course of this research suggested that one of the main reasons for this is to avoid thieves and physical accidents in the night. When asked openly about energy, instead of targeted questions which pre-supposed a link between firewood collection and violence, many of the women interviewed were vocal about the range of benefits of energy, which were not about protection from gender-based violence.

Overwhelmingly, the value and importance of energy to refugee communities was not understood by humanitarian practitioners. While this is particularly true of non-energy people – such as humanitarians working on WASH, shelter and protection – it was also true of staff directly involved in the provision of energy. All the stories below come from interviewees who had a key role in designing and delivering energy products and services to refugee camps: showcasing a shocking set of narratives that reveal a number of prejudices and value judgements about who deserves energy,

how much energy people should be allowed and that humanitarians can be the only people to provide energy in camps. The humanitarian politics of life (Fassin 2007) comes through strongly in these examples, and I was struck during the interviews how different the views of humanitarians were to those of refugees.

While many interviewees made such comments, there is one standout example that is typical of the division between the views of refugees on energy and the views of some humanitarians. In the story below the interviewee is convinced that people in the camps are ignorant about energy, suggesting that ‘they have no energy knowledge’. This was a particularly challenging interview, especially as the interviewee was not willing to listen to other pieces of evidence or knowledge from the field. The interviewee also questioned whether refugees even ‘know what they need’. In this case his opinion was not borne out in the direct experience of the camps. But who was an established academic who had been in the humanitarian sector for at least twenty years. His opinions were in direct opposition to my own and at several times during the face-to-face discussion I had to pause the interview under the pretence of getting a cup of tea or using the bathroom, in order not to lose my temper with him. When I asked if he thought we should design projects inclusively, he responded:

Oh yes, well you can try to be inclusive, of course. But do they know what they need? These refugees, they are just ignorant and from the poorest bits [of society], they have no energy knowledge. Asking refugees about energy is equivalent to asking people, ‘If you want to fly, what kind of dream liner do you want?’. You would be asking people who have never flown before and who are ignorant [about] it all. You will not get anywhere that way. You would be better asking me or my wife. At least she is cooking properly. If you leave them thirsty, you can be assured they will buy. If they can afford a Samsung S7 mobile, you can create demand for energy selling. You should not give them things for free, they will buy it for it sure. Just go there and say, ‘This is the best thing, the whites are using it, the rich are using it’. They will buy it. Even if it means not feeding their children. Energy at the moment is a vision defined by humanitarian operations. The people in the camp know nothing about energy. We need to start changing people’s behaviour and tailor-making interventions that suit our needs. The business concept works better and seems to fix the divides that are missing – private sector involvement is good. They [the private sector] will come here and bring more money, for us and for the people in the camps. (Senior humanitarian practitioner in Nairobi, Kenya)

This story raises the issue of who has decision-making power knowledge about energy within refugee camps, and how this knowledge is used. In this example the comment came from a very senior member of the humanitarian sector: someone with considerable power and influence

over programmatic and budgeting decisions. His opinions were fed by misinformation and prejudice, and yet have been informing international policy on humanitarian action for decades. This interviewee left me feeling both angry and demoralised about the possibilities for change, which was a common experience when interviewing humanitarian policy-makers on energy: often their opinions did not align with what I and many others had witnessed in the camps, and it was frequent for practitioner-interviewee comments to contain smatterings of racism. Ignorance on energy knowledge in these contexts was hard to challenge, even from my privileged position as a western researcher, and conflicted with the informed and open-minded opinions I heard from refugees.

These quotes are included here to demonstrate the role of inequality currently present within the humanitarian energy sector: energy for refugees is not valued in the same way as energy for humanitarians. This inequality was particularly clear with interviewees who contrasted the use of energy for refugees with the role of energy in staff offices and homes. The tone of the interviewee above was very negative and he acknowledged that 'energy at the moment is a vision defined by humanitarian operations'. Currently this statement would seem to be true of large parts of the sector, even with the introduction of new commitments to follow inclusive modes of engagement (GPA 2022; UNITAR 2019).

The theme of inequality on energy in refugee camps is one that runs through many interviewees' comments. Interviewees within the camps highlighted how unfair they found energy access there, as power for operations and humanitarian staff was considerable and refugees were able to access less power. A double standard of energy for refugees versus operational uses was common with interviewees who were far from the field. Some interviewees demonstrated a conceptual idealism with regard to refugee communities and humanitarian projects, portraying projects as necessary for the social good and displaying a hierarchical way of thinking in which western and global humanitarian organisations should provide energy for refugees.

Interviewees followed the lines of 'we' (often White, male, older engineers from the global north) should decide on the solutions and technologies and 'give' them to refugees. In the provision of energy for refugees, humanitarian practitioners often decide what is needed without really engaging with refugee communities at all. Interviewees questioned why refugees should be involved with the design of programmes, suggesting that solutions could just be given to them as they were located within refugee camps. Imposing aid is not a new concept within refugee studies (Harrell-Bond and Chambers 1986), and some energy-for-development literature focuses on inclusion and working with communities to develop solutions (Campbell, Cloke and Brown 2016). As the interviewee below

highlights, the rationale behind humanitarian action in this space is often guided by the perception that humanitarians are best placed to solve energy problems.

International interviewees mentioned protection and traditional humanitarian narratives during discussions and spoke openly about the need to ensure energy was provided in order that refugees can survive. One event was held in a Radisson Blue hotel in Kigali, with attendees in formal dress-wear as the event was followed by an evening champagne reception. I was able to interview a female, high-level NGO representative who was a senior decision-maker in the field of humanitarian energy. I asked her what she thought about the event and how we should engage with refugees in the camps:

What I am is a humanitarian. Today I heard a lot of energy experts talk like humanitarians. Once you have been to one refugee camp, you have been to them all. We just need to go there and install some renewable energy, it shouldn't be so difficult and I think working together we can do it. Energy is just not there in the camps, no-one uses it, they just survive and don't care about it or look to the future. When I think about the implementation of renewables, I think they, the refugees, need it and we will give it to them. We can walk straight out of this door [at the Radisson Blu] and straight into the camps to give it to them. We are here to help. (Humanitarian leader in Kigali, Rwanda)

As this statement highlights, some humanitarian decision-makers have a specific view of refugee energy: renewables can solve everything and policy-makers 'are here to help'. The narrative presented in this quote is problematic for a number of reasons. Firstly, it centres on the idea of 'our refugees': a phrase used often by UNHCR staff members, which swirls through discussions on energy for refugees, churning the imperative for 'protection' into a desire to control camps and the people in them. This is obviously problematic and, to a large extent in the camps in Kenya and Rwanda, irrelevant as many people have already created their own solutions for their energy needs. Secondly, this narrative links to issues of participation through the clearly expressed commitment to the idea that we 'just need to go there and install some renewable energy', suggesting that renewable technologies (in particular, solar lanterns) can solve energy problems in refugee settings. These statements imply a considerable lack of participation of refugees in programme design or implementation: 'the refugees need it and we will give it to them'. This idea is concretely reflected in the number of free distribution programmes in the Kenyan and Rwandan camps, which use delivery models that have picked a solar lantern or product and ship in thousands of bulk items to be given away for free to households.

The third, highly problematic, element of this narrative was the interviewee's lack of awareness of the positionality. This interview was conducted in the Radisson Blu, an extremely privileged space of wealth in Kigali, and many of the people around were wearing designer suits and expensive watches and drinking imported alcohol. The interviewee suggested that we could just 'walk straight out of this door and straight into the camps to give it [renewable energy] to them [the refugees]', without seeming to be aware of their positionality and biases of our situation. Statements such as 'once you have been to one refugee camp, you have been to them all' were not uncommon in the interviews conducted. Despite this, a considerable number of the international experts interviewed for this research had never actually been to a refugee camp.

This example suggests a number of questionable elements on inclusion and equality in the arena of refugee energy: critically, the majority of decision-makers and programme designers are from the global north or internationally based and have not spent considerable time in the refugee camps or working on energy. This may create a considerable bias towards international narratives and priorities on energy being embedded in projects in the camps. It also highlights that it would be challenging to include many of the refugee perspectives outlined in the earlier sections into policies and programmes on energy in the camps, due to the lack of knowledge and experience relating to refugee household energy of the people involved in designing and running these programmes. There were a great many examples of this type of paternalistic narrative within other interviews, such as one interviewee – a humanitarian practitioner based in Oxford, UK – simply saying: 'My refugees, I am completely immersed in what they need. We decide on that [the types of technologies], of course. There are only a few types of technologies and solutions that refugees need. It's easy to decide'.

The examples provided in these stories and quotes can be seen to relate to the politics of living (Feldman 2012) in that they reveal how some humanitarians view the lives of refugees. In some cases these views were actively negative: interviewees suggested that refugees were ignorant and could not be expected to provide energy for themselves. However, in others humanitarians were making what they thought were neutral assumptions about the types of energy needed for communities or presupposing that only humanitarians could be the ones to provide energy ('we are here to help'). This demonstrates how humanitarian action can restrain refugees' lives and limit their choices, by reducing 'the people it seeks to help to "mere" victims—objects of compassion, but restricted in their capacity to act as full subjects in their own right' (Feldman 2012: 155). In such examples we can see that the opinions of humanitarians help to construct the political systems of aid, which dictates elements of refugee life.

The politicisation of energy was common both in my interviews in the camps and in my work as a practitioner. The political dimension of refugee energy access has many elements. For some family members (for example, refugees who worked for NGOs), their status and role in the refugee system enabled them to access more energy and those jobs allowed them to charge their phones at work or have extra income to spend on energy. For others, political choices on energy were made for them: single-female-headed households and the elderly were often singled out to receive more support to enable them to access energy as they were classed as more vulnerable. The political dimensions of energy were difficult to explore within households during fieldwork as many people became upset when the conversation turned to why they might have less access to energy than their neighbours or others in their community.

A number of themes emerge from these sections, including the way that different types of knowledge are more highly valued than others in the camps and that there are unequal power relations within refugee settings. One of the most striking elements of the interviews within the camps was the frustration that households felt because humanitarian agencies were not doing more to support them on energy. The impacts of power (in both senses) and control on the everyday experiences of households were clear: a lack of knowledge by humanitarian agencies was limiting electricity access for households. Interviewees expressed clearly the fact that they understood the reasons for this (limited budget, time, skills and ability to change the humanitarian system), but it was rare for non-refugee actors to acknowledge the impacts that this was having on daily lives or to propose solutions regarding how to change this. The politics of power is contained within both the actions and knowledge of humanitarian organisations: access to energy was limited, but so too was knowledge on energy by practitioners. The politics of power played out throughout my interactions in the camps, but on returning to Oxford I was also able to reflect on the nature of systematic power underpinning some of the experiences of energy in refugee spaces.

Systematic Power and the Politics of Independence

Within the politicisation of energy for refugees lie the systematic limitations of humanitarianism, which to some extent dictate the role humanitarian agencies and partners can play in providing energy. As many interviewees suggested, many humanitarian systems are not currently institutionally able to provide dedicated resources to consider or deliver energy access in a meaningful way to refugee households and businesses. The challenges facing the humanitarian system in terms of yearly and limited budget cycles, restrictive institutional remits and a lack of technical capacity have been well known in the sector for a number of years (Bellanca 2014).

It has also been suggested that there is systematic neglect of sustainable energy for operations within camps (Gibson 2020). To date very few humanitarian agencies have had institutional incentives to reduce the costs of their energy usage or to switch to cleaner sources. In many countries energy provision for operations was not considered part of the remit of ‘providing clean energy for refugees’ as the energy was used by humanitarian staff and not by the refugees themselves. Similarly, international commitments by the UN to reducing emissions have not been actioned by individual operations. This is despite the fact that ‘46% of the UN’s greenhouse gas impact was from its facilities (headquarter offices, field offices, warehouses)’ in 2018 (UNEP 2019). Global priorities on climate mitigation are yet to filter down into the everyday practice of humanitarian organisations. As an example, when UNHCR was given €30.8 million by the IKEA Foundation to spend on energy in refugee settings, they did not spend those funds on decarbonising energy for their own operations.

It was not considered – energy for operations. All that money, it could have been spent on anything. UNHCR could have decarbonised ten country operations with that money. Think of the impact it would have had on emissions from diesel alone! It would have been so worth it. But it wasn’t even thought about. It was like energy for themselves didn’t count. It was invisible to them, the energy they use all day every day. It [operational energy] was not even thought of in all those discussions. (Humanitarian energy specialist based in London, UK)

Within these quotes we see a challenging picture starting to emerge: humanitarian responses fail to deliver energy for refugee households and for their own operations, while the provision of energy for refugee businesses was also neglected. Indeed, for enterprise use refugees own and operate many energy technologies independently of humanitarian systems. A maze of informal exchanges, trade and payment systems underpin energy services in refugee camps, and these are determined by refugees. Independent choices dominate energy markets, communities pay for access to both products and services, and whole cultures of exchange have developed around the core business of *supplying* energy (Rosenberg-Jansen, Njoki and Okello 2018). Importantly, in this context refugees are not just securing their own access to energy but are also supplying energy services. I spoke to dozens of refugee energy entrepreneurs in camps in both Kenya and Rwanda, all of whom had created their own livelihoods from selling energy. The examples of phone-charging businesses, TV suppliers and mini-grid electricity providers are clear examples of this. Refugee enterprises can be understood to be supplying not just energy access but also improvements in quality of life. Enterprises within the camps in Rwanda

and Kenya are supplying energy products and services to meet refugee needs – and therefore, I argue, are providing energy access.

Here a politics of self-reliance is visible. While we can recognise the entrepreneurial independence of refugee businesses who are providing a set of energy services independently for refugee communities, to a large extent these actions are not recognised by humanitarian organisations in the camps. We can consider the politics of living here (Feldman 2012), as refugees may therefore be seen as supplying energy largely independently of humanitarian organisations. If it is not the role of humanitarians to provide these services then we can question the role of humanitarian organisations, who seem to be acting neither as a socialist government that provides energy services directly nor as a liberal government that enables the private sector to supply energy. For energy for refugee communities, humanitarian organisations currently offer neither a supplier nor a regulator function. Therefore, we can ask whether they have a role on energy at all as many energy enterprises within the camps seem to be fulfilling this role. This question is political in nature as humanitarian organisations claim to be raising money and spending resources on providing the necessary services for refugee communities. If refugees are already largely self-reliant for energy, we can question what energy budgets are being spent on within humanitarian organisations and whether this is of any use to refugee communities.

This section was challenging to write as it openly suggests the failings of humanitarian organisations to meet the energy needs of refugees and acknowledges the impacts of this on communities. Further work would be needed to fully evaluate the impact of humanitarian programmes, considering both positive and negative results. However, within existing programmes and structures the politics of humanitarianism is clearly visible: institutional inaction on energy provision for refugees is the result of choices in which energy resourcing is not valued. Institutional restrictions, limited budgets and a lack of organisational capacity all contribute to this, but these occur after political choices have been made about the importance of energy rather than being neutral causes of poor energy planning and delivery. This should not be taken as an argument that humanitarian organisations should not implement energy programmes. Rather, a more focused analysis of new solutions and modes of working is needed to meet the energy needs of refugees. Humanitarian institutions may need to reflect critically on what is possible within existing organisational structures, and whether working with non-humanitarian partners and refugee communities directly may offer better results.

Chapter Conclusion: Facing the Limits of Humanitarian Action

Throughout this chapter we have explored the difficult issue of energy provision in refugee camps. In many ways no clear picture has emerged, with humanitarian agencies, NGOs, refugee enterprises and individuals all taking different roles in supplying energy. Responsibilities are blurred, refugee markets provide a surprising number of services and humanitarian provision has been characterised as intermittent and sporadic. The value of energy access and its importance to refugee communities is undeniable, but still humanitarian judgements on how and why energy is important show us a negative view of access. Finally, we have questioned the systematic constraints and limitations of the humanitarian system in providing energy – suggesting that humanitarianism today may well be failing to provide energy for refugee communities.

Much of this chapter focuses on the provision of electricity, and the supply of cooking fuels and technologies was often not mentioned during interviews. This could be because some basic cooking needs (such as the provision of firewood) were met by humanitarian agencies. But it could also be that many refugee communities felt electricity access to be a more pressing issue – one that limited their quality of life and restricted their choices – than access to cooking fuel. It should also be noted that this chapter, like the book in general, is contextually specific to Kenya and Rwanda. While many of the findings on energy provision are comparable with those in other East African countries, energy provision by humanitarian agencies is considerably different in the Middle East and South Asia. In Bangladesh, for example, LPG for cooking fuel is provided for refugees living in camps (UNHCR 2021b), while in Jordan large-scale solar mini-grids supply electricity for refugee homes and businesses (Lahn, Grafham and Sparr 2016). The scale of these differences is interesting in and of itself; however, further research is needed to understand why such diverse approaches to energy provision exist for displaced populations.

In conclusion, the evidence considered on energy provision highlights a number of issues. Firstly, the lack of knowledge on energy within many humanitarian organisations was striking. Even for some humanitarians who had energy formally within their job descriptions, detailed knowledge on energy needs and solutions was limited. Secondly, the mismatch between humanitarian expectations and refugee needs was considerable. Humanitarian staff members frequently commented that refugees should be happy with the small amount of energy given out, while refugee actors strongly advocated for additional supplies to be provided. Thirdly, the role of humanitarian agencies – and, in particular, UNHCR – was criticised for under-provision. If we set aside opinions on how energy is provided

and consider the issue of whether enough energy is supplied, the answer from refugee communities is clear: no and additional solutions must be developed. Within this mismatch, we start to see the politicisation of energy access emerge: a politics of choices and the political and practical limitations of humanitarian organisations. In the final chapter, we turn to consider why this matters and how the politics of energy access might be transformed in years to come.

The Politics of Humanitarian Energy Access

Evidencing the Importance of Energy in Refugee Camps

Differing Values and Governance Challenges

Understanding energy in refugee camps requires investigating multiple sites of enquiry, listening to many voices and perceptions, and recognising the multifaceted nature of both energy provision and use. It involves hearing many opinions about energy, while developing a critical analysis of the role it plays in camps and spaces where energy is missing. The voices of refugees, field staff and practitioners all need to be heard to understand the dynamics of humanitarian energy. From the evidence presented in the previous chapters it is clear that energy is an important resource, valued for its practical benefits as well as being seen as a symbol of social connection. Families, businesses, community facilities and operational users all need energy as a requirement to fulfil daily tasks, have productive jobs, use public spaces and live their lives. However, refugees and humanitarian practitioners valued energy in quite different ways. The chapters of this book have put forward a number of different arguments to support these ideas.

Firstly, the evidence presented in chapter 1 outlined how households valued energy, suggesting that perceptions on energy were considerable and varied. Energy clearly had a practical significance and was valued for reducing costs and for supporting economic development. But energy was also socially and culturally valued, with historical connections made by refugees that linked energy to their past and home countries. Energy represented more than access for many people; it was an important signifier of status and social standing. Refugees also spoke about the emotional significance of energy, especially in terms of feeling optimistic and for improving quality of life. In particular, it was noticeable that the importance of energy went beyond physical equipment and included social and emotional values. The issue was not just about accessing power for electricity or cooking; it was the results of this access that were important: being

able to keep warm or cool, share time in the evening with friends and family, cook food and host social engagements, as well as meeting basic needs such as lighting in homes and fuel for cooking. In this way energy was ‘non-technical’ in its importance: value was not expressed in kilowatt hours but in terms of usefulness and happiness.

This supports the ideas of Elizabeth Shove and others (Hargreaves and Middlemiss 2020; Shove, Watson and Spurling 2015), as my research suggests that social patterns of life are fundamentally linked to energy and that the cultural and national dimensions of living are interwoven with energy use. I have argued that energy supply is often indirectly connected to the benefits of access. For example, when asked about energy many of the interviewees appeared to segue into discussions of family life, their business or other topics about relaxation or income generation. In doing so they wove the importance of energy throughout their descriptions of their lived experience. These non-linear connections were a vital part of the value of energy, and highlighted how energy lies ‘underneath’ many of the activities that we value every day. This suggests that in order to reveal the true value of energy we need to investigate access qualitatively and ethnographically, rather than just quantitatively, spending time with people and understanding the range of ways in which energy is useful in the material and social aspects of life. Critically, energy was valued in terms of improvements to quality of life for refugees. Higher levels of access, especially access to electricity, meant that families could use TVs, radios and power for social events. Quality of life, of course, is a moving scale, for which there is no universally accepted level or final benchmark. However, it became clear during my research that *improving* quality of life requires a higher level of energy access than is currently provided by humanitarian agencies. Particularly for electricity access, higher levels of energy became very important for the social and economic ambitions of households. Families commented that more energy would improve their lives, that having electricity would make them feel happier and that having access to more electricity would make life much easier. My research illuminates the connection between energy and quality of life in refugee settings, perhaps even suggesting that access to energy is one of the key determinants of improving quality of life (in the same way that education, access to social and healthcare services, and income levels are linked to improving living standards).

Chapter 2 identified refugee-owned energy enterprises as a core community of users and suppliers of energy. In almost all businesses I encountered there was some form of electricity access, and in many cases these businesses were providing energy services to the refugee community. The value of energy for enterprises was not just financial or economic but also lay in the way it offered opportunities for business development and

specialisation. Business interviewees highlighted cultures of enterprise (in terms of the national and cultural value attached to having an energy business and being able to provide for their community). The views of both families and businesses within the camps demonstrated considerable engagement with energy, including knowledge about the services and products available, the costs of energy, and alternative methods of trade and informal exchange to gain access. Value was expressed not just as cost and the monetary value of energy but was inherent in the creation and existence of energy exchanges in the camps. As a result of this we can see how refugee enterprises are distinct constituents within the humanitarian energy system, users who are often missed in discussions about how to provide energy. This finding adds to the work of Ben Campbell, Jon Cloke and Ed Brown (2016), which suggests that energy communities can comprise many actors and that it is important to consider livelihood patterns within energy communities. Indeed, the views and perceptions of refugee businesses about energy are critically important in this context, as they are the main small-scale suppliers of energy in refugee camps in Kenya and Rwanda (as well as being one of the main user groups).

As outlined in chapter 3, many humanitarians did not seem to view energy access in public spaces as an important part of refugee life. However, for their own operations and lives energy was clearly essential. This suggested an inherent inequality in who had higher levels of access to energy – perceptions that were directly linked to value judgements about quality of life, suggesting that refugees do not deserve energy and therefore do not deserve as high a quality of life as others. These types of judgements are often the result of political choices about energy (Brown and Cloke 2017; Fassin 2007; Feldman 2012). In the view of many humanitarians energy was not a basic need – because they thought that either energy did not play an important role within refugee life or that it was not the role of humanitarian organisations to provide it. It is important to critically challenge these statements, as energy was clearly a vital part of refugee life and many communities were underserved. The views of humanitarian practitioners evidence the stark difference between the values of staff and those of refugee households and businesses. Overwhelmingly, energy was undervalued by operational users, and many interviewees were unaware of the energy they used or who paid for access to it. Humanitarians demonstrated a considerable lack of awareness about energy sources and some were even hostile to the topic in light of what they viewed as more pressing needs. Remits and responsibilities for providing energy varied greatly, and some humanitarians held negative opinions about how much energy refugees really needed. In particular, humanitarian views on energy seemed to be ill informed and detached from the everyday value of electricity.

Chapter 4 suggested that governance of energy in the camps largely appeared to be sporadic or ad hoc, with many different agencies and organisations playing different roles in different spaces. While I spoke to many NGOs and development actors who were keen to become more involved in the provision of energy services, they felt that only UNHCR and other humanitarian organisations had the authority to authorise and coordinate such work. The reality of energy provision in humanitarian settings, however, is that UN agencies do not seem to have the capacity to take on such provision or even to coordinate energy interventions. These gaps seemed to result in a disconnection, with refugee communities and partners feeling that they could not take action and UN agencies unable to provide energy due to resourcing and system constraints. When humanitarian action on energy did take place it often seemed to be implemented with limited planning or engagement with communities. Institutional darkness, in this way, can be seen to be creating literal darkness: a lack of knowledge and capacity within institutions has left refugees with limited access to electricity.

During fieldwork I was sometimes able to question the opinions of humanitarians, but it became clear that energy was not a priority issue within humanitarian response despite recent strategic and policy commitments. In fact, at an operational level it often seemed as if decisions about energy had already been made and there was little room for discussion. In these cases, I found that refugees' views on energy were not reflected in decision-making on how much energy should be provided for families and households. As a result there was a divide between humanitarians and refugees on the issue of energy. This resulted in higher levels of energy provision for humanitarian staff and lower levels for refugees. Such findings suggest that there is a politics of living underpinning the operations of humanitarianism in these sites.

The issue of institutional intermittency hung over the provision of energy in refugee camps. Often humanitarian agencies and implementing partners provided a short-term solution, but they were sporadic in their engagement and knowledge. This intermittency led to an absence of ownership, both for providing the energy needed and for understanding the importance of energy in the daily lives of refugees and humanitarian workers. Within this context the humanitarian politics of life (Fassin 2007) becomes a politics of provision. Although my work does not explicitly focus on food, John Bohstedt's work on food provision (2013) is relevant here as the politics of provision of energy access still contains many elements of physical struggle and political contestation, and represents collective and individual actions to access resources that are not being supplied by the governing political body – in this case, humanitarian agencies and their partners. Political choices are being made about the types of

energy that should be provided for refugees (for example, limited cooking facilities rather than electricity; only some households; and not refugee enterprises). This demonstrates a selective approach to energy provision, which prioritises some types of need over others. This decision-making is encased within the 'black box' of humanitarian action (Brabant 1999). While my research was not able to delve deeply into the mechanisms behind these choices, the impacts were clear: humanitarian agencies do not currently meet the energy needs of refugees in camps in Kenya and Rwanda. I found a harsh narrative on who was involved in the development of refugee energy programmes: many humanitarians were not willing to engage refugees in the design or development of programmes, and considered refugees only as beneficiaries. Independent access by refugee communities brings to light that energy access is always political: there is a selective element to who deserves energy and how much energy certain communities are allowed. These choices were often made by humanitarian organisations and have considerable consequences for the long-term quality of life for refugees.

Energy often appeared at the end of a long list of other needs in the humanitarian system, needs that were viewed as more essential. Agencies were overwhelmed and under-resourced, and NGOs and implementing partners often did not have the remit to provide solutions. Importantly, humanitarian institutions were not set up to manage or implement energy within camps. This opens up a set of challenging issues on who, then, should be responsible for the provision of energy, and how energy can be provided within a system that has other priorities. Compared with refugees' own knowledge of and engagement with energy (as presented in chapters 1 and 2), humanitarian organisations demonstrated limited responsibility for energy in camps in Rwanda and Kenya (as evidenced in chapters 3 and 4). The recognition that many refugees secure energy through independent access enables us to critically question how energy is provided within camps. We can also question who knows about energy, who makes decisions on energy, who is able to access energy and who decides on energy projects or the types of technologies and services that will be made available.

Several contradictions on energy provision emerged during my research. Many interviewees would mention that refugee communities did not have access while simultaneously providing it. Similarly, refugees would comment that humanitarian agencies did provide them with some firewood and had distributed lamps to some members of the community. In many cases solar streetlighting was present but the camps were still viewed as 'dark and dangerous' (refugee living in Uganda). These contradictions stem from a number of places, but overall reflect differing views on the levels of access provided. Those who felt 'enough' energy had been

provided focused on the existing solutions and supply of firewood, for example, whereas people who felt more energy was needed highlighted a lack of provision.

The politics of representation is also important here: many practitioners would make the argument that no energy was available in the camps in order to draw attention to the importance of the topic. As reflected on in the introduction, slightly more nuanced statements might have noted that there is not access to enough energy, or modern energy, or energy from sustainable sources, rather than re-creating the binary narrative that there is no energy at all in refugee camps. The blurred line here between perception and reality is critical in understanding such contradictions.

In summary, although both independent access and (to a lesser extent) humanitarian delivery mechanisms enable access to energy in refugee camps, governance and implementation are still insubstantial in meeting energy needs. The context surrounding these findings is changing and the humanitarian energy sector is evolving rapidly, with global initiatives and innovative programming emerging (UNHCR 2019a; UNITAR 2019). However, these changes have been slow to be realised at the local and camp levels. There is an incongruity at the heart of humanitarian energy: energy for humanitarians is not the same as energy for refugees. Neither views and values nor provision of services are equal. A number of constraints within the humanitarian system contribute to this, such as the way funding flows from donors, the restrictions in the remits and resources of agencies, a lack of technical expertise and knowledge within institutions, and the focus on short-term projects and providing limited interventions. Such constraints mean that the humanitarian system is seemingly at odds with the provision of energy in refugee settings. Despite good intentions from many individuals involved, and newly emerging programmes to provide sustainable energy solutions in camps, few successful initiatives have yet delivered substantive change on the ground. Systematic failures within the humanitarian system have led to a failure of provision of energy for refugees, especially compared with the supply of energy for humanitarian operations. In conclusion, energy provision by humanitarian agencies can be said to be intermittent whereas independent access to energy by refugee communities is considerable.

Areas for Future Research

There are a significant number of areas of further research that could build on the analysis produced by my research. A couple of notable areas for exploration are outlined below – although as the humanitarian energy sector is still emerging, considerable in-depth analysis is needed on a whole range of topics (Rosenberg-Jansen 2022a). Overwhelmingly, there is much

more to be done on researching the social life of energy in refugee camps. Using qualitative and lived-experience methods would enable a new set of data to be produced on this topic and evidence some of the arguments outlined here further. For example, research on humanitarian systems of energy provision in refugee camps could be conducted by undertaking a critical analysis of narratives in humanitarian energy and an investigation into who is making decisions on energy and how. The examples and qualitative findings of this study may be relevant to other sub-Saharan African countries, and are likely to be applicable in the Middle East and South Asia. However, further research would be needed to establish whether this is the case. Future research could adapt the engaged energy ethnography methodology I have used to other contexts to understand the range of nationally and locally specific energy needs in other spaces of displacement, such as self-settled communities, urban refugees or internally displaced people.

Additionally there is more work to be done to detail cultures of refugee energy enterprise. The cultures of service-based entrepreneurship are not widely recognised within academic or policy circles. This research did not set out to specifically analyse the dynamics of energy use in enterprises, but fieldwork immediately revealed that this was a core area of energy use in camp settings. Further research is needed to fully understand cultures of energy enterprise in different displacement and refugee settings, and chapter 2 only provides an initial sketch of the types of evidence it may be possible to collect on this topic. The role of energy as a mechanism for developing a tertiary economy, one that is focused on serving customers rather than producing physical goods, has so far received little attention. Energy provision in refugee camps could be analysed as a service economy (for example, by building on the work of Buera and Kaboski 2012). Future analysis addressing this issue could critically examine the role that energy plays within refugee economies, rather than seeking a quick technological fix or focusing on new, 'innovative' ideas such as refugee enterprise zones (Crawley 2017). Linked to this, a key area for new primary research could be to understand energy-cash dynamics further – seeking to analyse the role that cash from humanitarian sources, livelihoods and informal businesses has within energy exchanges in refugee settings.

Finally, further analysis should also evaluate the role of humanitarian energy projects and programmes in providing access to energy and services. Currently, relatively little research has been conducted to evaluate new and ongoing energy projects. Refugee participation and inclusion in humanitarian programming must be considered in more detail, and much more evidence is needed to understand the participation of refugees in humanitarian energy programming. Are refugee needs being listened to? Where is decision-making happening and how? And who is involved in

making these choices? My research was able to suggest some answers to these questions, but further work would be needed to empirically analyse humanitarian systems in a range of displacement contexts.

The Politics of Living: Energy and Humanitarianism

The Politics of Energy and Quality of Life

Energy is often portrayed as a non-political, technical subject focused on technologies that only require correct installation, optimised systems, regular maintenance and good financial management to be effective. Within refugee camps this is far from the case. Who is provided with energy, the amount and type of energy supplied and whose values on energy are represented within humanitarian system are political choices. It seems that only some voices are important in these discussions. Value judgements and biases within humanitarian energy programmes play into the politics of living that surrounds refugee life. There is a politics of energy in refugee camps: power produces power. Forms of inequality raise questions about who is allowed to speak about energy, benefit from energy access and be involved with the provision of energy. There is also a politics involved in the wider decisions involved in the provision of energy. Which populations and camps are supported by humanitarian agencies? And how does energy access differ across refugee spaces?

There are different dimensions to the politics of living in refugee camps. Chapter 1 demonstrated there is a politics involved in levels of access, focusing on *what* technologies and resources are available for households. Chapter 2, on the other hand, revealed *where* access is important, with enterprises supplying their own energy just as humanitarian organisations neglected these spaces. Chapter 3 evidenced the politics of absence of energy, and highlighted *who* energy is supplied for in humanitarian operations, community facilities and public spaces. Finally, chapter 4 started to illuminate the *choices* being made about the politics of living and energy in refugee camps. Provision of energy for humanitarian services seems to be seen as critical whereas households and enterprises are not. There are many implications of the politics of living for humanitarian energy access, including how energy and living standards are connected in refugee camps as well as discussing the politics of provision and how the humanitarian supply of energy is shaped by political decisions.

Within refugee camps, some communities have more access to energy than others. Richer households use more energy than poorer ones; enterprises use more energy than homes; and, overall, operational spaces use more energy than households. While initially this may seem to be a neutral function of demand (some users need more energy than others), once

we start to examine the problem in more detail it is possible to see that levels of access are determined by the *ability* to access energy rather than the demand of the end user. For example, on average households can access and afford less energy, so they use less of it (proportionally) than enterprises or operations. Yet this does not mean that they need or want less energy. Restrictions in use are created by the limited (or expensive) supply of energy products and services in refugee camps. These limitations are both economic (determined by people's income levels and ability to afford energy) and political (as neither humanitarian nor national government structures systematically support refugee access to energy). To some extent in the camps in Rwanda and Kenya, the economic barrier to accessing energy was addressed by refugee enterprises who were supplying services that at least some refugees could afford. However, political barriers to energy access remain.

As suggested by the discussion in chapter 4 on the UNHCR's energy strategy, the level of energy available for refugees has been predetermined by political decisions (as 200 Wh per household per day). In this way levels of energy access reveal the politics of life. This amount of energy has been determined to be enough to meet household needs. However – as chapters 1, 2 and 3 clearly show – this is not enough; refugee communities continue to pay for additional resources. Moreover, for users of community facilities (such as WASH stations, playgrounds and public spaces), a lack of ability to access energy resulted in very few examples of working or reliable electricity in community spaces in the camps – and this created literal darkness and an absence of energy use in these spaces. For humanitarian users a lack of access meant having to use energy resources elsewhere (in their homes or regional offices). These different users of energy are viewed and valued differently. Energy for refugees was important because it improved their quality of living – and they know what it is like to live without. For humanitarians, however, energy is not valued because they do not have to live without it for very long, and as a result cannot see the direct link between energy and living standards.

In this book I have argued that one of the key factors influencing quality of life is access to energy, especially access to electricity. For refugee users a lack of access has resulted in a lower quality of life. Energy is needed for many social and cultural functions in the camps. Without it refugees could not practise social norms such as inviting family members over to their home in the evening, having leisure time at night or keeping their business open past sunset. Similarly, many refugees were unable to use public spaces or community facilities at night due to a lack of electricity. Quality of life was impacted on by a lack of energy access.

This lack of access is political, as refugees were constrained in terms of which activities they could undertake to secure the level of energy

required to improve their quality of life. This issue is not just economic as, regardless of the level of income, only a certain set of energy activities are possible. Informal energy activities can and do happen, but formal, long-term provision of electricity is not developed by humanitarian agencies or national host-country governments. This is proved by the fact that it is not possible for refugees in either Rwanda or Kenya to currently connect to the national grid. In some cases this is because a political decision has been made that the national grid does not reach the camp (as is the case in Kakuma, Gihembe and Nyabiheke). In others it is because a political decision was taken that refugee households and businesses are not allowed to connect to the grid, even when the camp is connected (the case for Kigeme and Mahama). Formal access to electricity (through connection to the national grid or by the provision of a mini-grid) was discussed with a number of humanitarians who suggested a variety of explanations, but the underlying reason is essentially the same: it has been decided that refugees do not need or deserve the same level of energy access as host communities or humanitarians. Formal, grid-level access to energy is not currently possible for refugees.

While my research provided many examples of refugee businesses supplying energy services and products, all these activities were informal and not supported by the formal processes of humanitarianism or national governments. Similarly, formal national government policies on the right to work and move freely impacted on refugees' ability to change their living situation and access to energy. Previous policies of encampment in both Rwanda and Kenya have restricted refugee economies (although this is changing), and by extension have also restricted the ability of energy suppliers (both small and large) to formally provide energy access. Therefore, we can see how refugee energy access is constrained by both national policy and the political system of humanitarianism. This also limits refugees' quality of life.

These decisions on types of access are political because grid-level access would enable refugees to access energy in a similar way to host communities, suggesting that refugees have similar political or civil rights to national citizens. Didier Fassin (2007) suggests that the humanitarian provision of aid separates human rights (for humanitarian subjects like refugees) from civil rights (for national and international citizens). This political separation is present for energy in camps. The provision of basic firewood and some lanterns meets the notion of energy as a basic human right, but refugees are not allowed to formally access higher levels of power as this may provide a form of civil rights and raise expectations about living standards. Quality of life is limited by access to resources, and energy is just one example. Indeed, similar arguments could be made for access to education, health services or shelter. However, national governments are more

likely to relegate energy for refugees to the sphere of emergency aid, and in so doing they enable humanitarian systems to constrain refugee life. In this way humanitarianism ‘enacts a politics of living and shapes life experience over time and across space’ (Feldman 2012: 165). For energy this is largely about access to resources, which institutions can (or cannot) provide. There is considerably more work to be done on the ‘the bureaucratic categories that give differential access to services, the material artifacts of assistance that shape daily life’ (Ibid.). However, the political choice that refugees have limited access to higher levels of energy, and that access will need to be informal, has been made.

The Politics of Provision and Energy Inequalities

As well as political decisions on how refugees are allowed to access higher levels of energy, choices have also been made about the ways in which the humanitarian system provides energy for refugees. Indeed, the politics of energy provision has three core dimensions. There are the choices made within humanitarian systems, which demonstrate elements of institutional darkness on the issue of energy provision; there is the inequality in provision that these systems produce and create; and, finally, there are the impacts of these systems and inequalities in terms of the power of power.

In the case of energy it appears that humanitarian systems are not institutionally able to provide dedicated resources to deliver energy access in a systematic way to refugee populations. The humanitarian energy sector seems to be creating top-down, imposed processes where the needs and wants of refugees are decided by international organisations rather than direct users. This is not primarily a normative criticism but, rather, a practical one: Is it working? Are refugees being supported by the humanitarian system to access electricity? Much of the evidence presented in this book points towards the answer no. Refugees are to some extent improving their own access to energy, but this is largely done through their own financing and decisions rather than through an institutional aid system designed to protect them. Here, a politics of self-reliance is visible that centres on the idea that humanitarian systems are not providing energy access for refugee communities, who are instead independently accessing energy. This is an intensely political issue as it challenges the accepted orthodoxy that humanitarians must be the ones to provide aid, and that communities are largely reliant on them. Humanitarianism is based on the idea that well-meaning aid workers can support the lives of more vulnerable populations; however, if refugees are self-reliant in terms of access to energy (and perhaps other things) then this starts to call into question the role of humanitarian actors entirely. Ilana Feldman’s work on the politics of living is particularly salient here as she considers the ‘dynamics of being

(surviving claiming, acting)’ within areas of humanitarian intervention (Feldman 2012: 157):

Each decision about how to live (in displacement, in community) is an articulation of the value of certain ways of living, and often the devaluation of others. Such contestations clearly occur not simply as considered judgements about strategy or identity but also as responses to institutional, material and discursive opportunities and constraints. (Ibid.: 169)

Inequality in energy provision is one of the consequences of humanitarian inaction and institutional ignorance. Some refugee communities in the camps in Kenya and Rwanda have more access to energy than others, with certain households receiving free solar products and others not. Inequalities also exist between camps within countries. For example, more energy programmes have taken place in Kigeme camp than Gihembe and Nyabiheke, and many more programmes have happened in Kakuma than in Dadaab (in eastern Kenya). While it is sometimes claimed by agencies that these choices are based on the needs of beneficiaries or logistical challenges, often this does not seem to be the case and energy projects address needs in an intermittent way. This thinking builds on that of Fassin and the concept of the politics of life, under which humanitarianism assigns different values to some lives over others (Fassin 2009, 2007). In the case of energy, these values are often demonstrated through material support. In short, some communities receive energy products while others do not.

Within refugee settings this means that there is a horizontal politics of aid, in the sense that ‘humanitarian agencies create inequalities within a recipient population’ generating ‘winners and losers by deciding whom to assist’ (Scott-Smith 2019: 516). In my research this was quite visible in terms of the beneficiaries who were able to access additional material support or sometimes cash resources due to their status – for example, single-female-headed households with young children, who were often identified by energy programmes as highly vulnerable. The politics of energy is problematic within these contexts because some refugees have more access to energy than others, even within the same camps. Within countries this pattern is also present: as an example, refugees in Kigeme and Mahama seem to have higher levels of energy access than those in Gihembe and Nyabiheke camps (also in Rwanda). As Tom Scott-Smith has suggested, such inequality in access does not sit easily alongside basic humanitarian principles:

The horizontal politics of life, which is about inequality between recipient groups, is particularly fraught for humanitarians. Hierarchies up and down the aid chain can be justified on grounds of efficiency or bracketed off as a structural feature of global politics that aid agencies cannot resolve,

but inequity between recipient groups, in contract, violates the most basic humanitarian principle of all: impartiality. (Ibid.: 517)

While sometimes political choices are made on the basis of need – for example, energy support for single-female-headed households and the elderly – often decisions about beneficiaries seem to be biased and do not apply the principle of impartiality. Nowhere is a horizontal politics of life for energy more starkly visible than in the different levels of energy access present between different relief responses. For example, Zaatari and Azraq camps in Jordan have levels of power almost comparable with towns in the global north and have received hundreds of millions of dollars of investment in electricity services from international development donors and the private sector (UNHCR 2017b). In contrast, as my research has shown, many people in the camps in Kenya and Rwanda receive minimal assistance to access electricity and are forced to independently secure energy. Does this suggest the humanitarian system values the quality of life of Syrian refugees in Jordan more highly than Congolese and Sudanese lives in Rwanda and Kenya? The structural racism of humanitarianism has often been criticised for valuing White lives over Brown, Black and African ones (Benton 2016; Turner 2019).

There is clearly inequality present on energy access that has a geographical bias, and the ‘functional ignorance’ of humanitarianism is visible (Duffield 1996: 173). As Mark Duffield, Joanna Macrae and Devon Curtis suggest, ‘humanitarian assistance has always been a highly political activity, but the relationship between humanitarian aid and politics is changing’ (2001: 269). There is a drive for coherence to align humanitarian action with cohesive political strategy and international development aims, often driven by national governments or donors, ‘by subordinating humanitarian objectives to political and strategic ones, some victims are seen as more deserving than others, and impartiality is forgone’ (Ibid.: 273). In the case of energy examining the horizontal politics of life suggests that some refugee communities are seen as deserving more energy than others, and that as a result the humanitarian provision of energy differs across field locations and operational responses.

Inequality in access to energy also has a vertical dimension. Vertical inequality, focusing on ‘the differential in value between the lives of recipients and aid workers’ (Scott-Smith 2019: 516), is visible in the different energy-access levels for refugee communities and humanitarian operational users. In short, my research found that humanitarians had considerably more access to energy than refugees. While one could argue that these differences were the result of global structural inequalities, the lived realities of such inequality were extremely visible within the camps. Those with access to higher levels of power, particularly the humanitarian

staff living in or near to the camps, had a higher quality of life than those without.

The politics of energy provision, in this way, has a number of aspects. Primarily, the supply of energy products and services is not impartial but selective. Such selectiveness challenges humanitarian principles such as neutrality and impartiality. Why would some communities require more access to energy, or be perceived as having higher levels of need? Why would some communities receive more support than others? Is it individuals or institutions making such decisions? How do such inequalities develop? And what systems are supporting selective choices? What is clear from my research is that some refugee communities receive higher levels of support than others, some institutions have a more comprehensive approach to energy than others and energy responses between humanitarian operations differ. But considerable further research would be needed to unpack and evidence the choices made within humanitarian energy.

These findings challenge the nature of humanitarian action on energy in refugee camps. If whole groups of users have been excluded or unintentionally omitted, what does this say about the role of humanitarian organisations in the provision of energy? It could suggest that, in future, agencies may have less to do with the energy provision in refugee camps, or that radical humanitarian reform is needed to reshape energy responses for refugees. The ‘protect and provide’ mentality of many humanitarian organisations often ignores independent action by communities, such as market access to energy. Entrepreneurial independence, and the independent access of energy by communities, can challenge this mentality and enable us to ask whether the motto of humanitarian agencies should be ‘supply and serve’ instead. A new humanitarianism, which places refugees truly at the heart of response, could use bottom-up and inclusive approaches to change the way that resources are provided in and to refugee communities. In the case of energy this should reflect the existing energy supply-and-exchange dynamics within camps. These political dimensions have a number of severe impacts on life in refugee camps: progress is stalling, communities are stagnating for decades without access to resources or support and whole generations are wasting away waiting for a better life to come along.

The Power of Power and Living versus Surviving

Chief among the problems of humanitarian energy is the gap between the needs, desires and values of people living in the camps and the humanitarian systems that are there to support them. Having power, control of resources and access to energy in these spaces is not equitable. There are perception and value inequalities when it comes to energy; there are also

differences in knowledge and participation, misinformation about ownership and responsibility, and unequal power relations between community members and staff. Certain value judgements are embedded within humanitarian responses. In the case of energy those values are constructed around how much energy refugees 'deserve' and how it should be provided for them. This is political because it relates to the way that power is achieved and used within a society, how resources are shared.

The power of power has two dimensions. First, there is the physical dimension of power, which largely appears in the way that refugee communities secure and pay for the majority of their own energy access. Overwhelmingly, I found that the energy life of refugee businesses was characterised by seriousness and independence – with many refugees willing to talk for hours about the energy uses in their homes and businesses, describing how they secured electricity themselves. In unpicking these power dynamics we can understand the different roles of actors. Humanitarians are not undertaking the majority of activities on energy access and, as a result, they are not making decisions for or within this community and are not intimately involved in the governance of energy for refugee businesses. This seems to imply that refugee communities hold a significant amount of political power within the humanitarian system, as they are supplying their own energy and humanitarian agencies seem to have little to do with it. However, this could not be further from the truth. In fact, it is humanitarian organisations who wield the vast majority of political power, demonstrating a disconnect between actual power (in this case physical access to electricity) and political power (the perceived remit of humanitarian agencies to provide energy access).

Second, there is the issue of who has institutional and political power and who does not. Refugees repeatedly demonstrated considerable knowledge about energy and valued it as a way of improving their quality of life, yet many practitioners did not recognise either the existence or value of energy in these spaces. Unfortunately, it is largely humanitarian practitioners whose views and values on energy matter in institutional decisions about levels of access to services: the voices of refugees are not considered to be valuable in determining energy needs. In many cases refugees are not even able to participate in decision-making or access the global systems that support energy access.

The value judgements that matter in terms of the humanitarian provision of energy are therefore almost exclusively those of humanitarians rather than refugees. Repeated biases within humanitarian programmes about the types of energy that could be provided were present in the interviews conducted for this research, and there was very little space for refugees to express their energy needs or desires as part of programming. In this context refugees were not able to inform programming design on

energy or become directly involved with the provision of energy. Despite the fact that they already undertook many energy activities and demonstrating considerable knowledge on energy products and services, this knowledge seemed to be irrelevant to the humanitarian system. This is important because certain forms of knowledge lead to certain decisions being made about how much energy should be provided. If perceptions on energy are not accurate or do not reflect the lived reality of energy, then decisions are not likely to be the right ones for refugee communities.

In this way institutional power is limiting physical access to power, which opens up questions of whose voices and perceptions matter in refugee contexts. I argue that in refugee camps institutional action on energy is restricting energy activities to the realm of the informal. The impact of formal political structures on energy governance is limited, but also restrictive. Refugees can only access energy informally, often through private means, and do so without the knowledge or permission of humanitarian systems. This limits refugee-led action on energy and excludes it from formal political and humanitarian engagement channels. It should be noted that these findings are slightly more relevant for electricity than for cooking (as humanitarian organisations do provide some firewood and fuel access within the camps); however, in general all energy access is limited by the political and institutional structures surrounding camp life. As we can see, power and energy access is part of a political calculation and understanding this can help us to understand the political economy of energy communities (Brown and Cloke 2017).

Energy runs through every aspect of our lives and can be framed as a basic human right, similar to access to water, shelter, food and protection (UNITAR 2019). However, within current humanitarian systems this is not commonly the view. Is energy really essential in humanitarian settings? It can easily be argued that some elements of energy access are indispensable for survival and basic needs: fuel to cook with, energy to pump water, electricity for health centres, fuel for trucks to transport people and shelters, power to enable humanitarian offices and registration centres to function. Other aspects of energy access are still vital for camp life but their absence does not usually result in a direct risk to life: energy for schools, public lighting and basic electricity for households, for example, are needed for subsistence levels of living. A further category of energy access could be considered aspirational: higher levels of power for homes, businesses and community spaces within the camps. To be clear, these are not my opinions or classifications: I would categorise all such energy needs as essential in refugee camps (just as they are essential in my own life). However, during data collection for this research it became clear that a division of energy needs was central to the views held by most humanitarian actors.

The differences between these levels of access may be the difference between surviving and living. Basic energy provision is about survival: ensuring power at health clinics so that people do not die from lack of treatment, or providing firewood to cook on so that refugees do not starve. Subsistence levels enable life just above survival: they are about making ends meet and having just beyond the essentials, such as energy to light your home, power for basic appliances, the ability to see in the street or to study at night and the presence of heating or cooling in schools. Higher levels of energy enable productive lives of refugees, as well as energy for economic and cultural growth and a high-energy future for refugee homes and businesses. As many interviewees in chapter 1 highlighted, higher levels of energy access suggest the promise of a better life. Indeed, as one of the interviewees, a refugee living in Rwanda, stated, ‘when we talk about energy, we talk about life’.

However, the position of humanitarian agencies seems to be that they will provide only enough energy for survival, not for life beyond that. The 200 Wh a day figure acts as a signifier of this opinion: enough to survive, but not to thrive. Within the camps in Rwanda and Kenya many refugee families face subsistence levels of energy access. Humanitarian organisations provide the very basics needed for survival, and families are reliant on their own resources to supplement energy needed beyond this.

When it comes to energy for refugees a politics of subsistence is emerging, whereby humanitarian agencies provide limited energy resources and individuals are responsible for the rest. Perhaps this is the true nature of the self-reliance agenda that we see emerging within UNHCR and other agencies (UNHCR 2005), as it means that agencies will only be responsible for so much and refugees must be reliant on themselves for the rest. This politics of subsistence may well be about persisting, enduring and the continuing drive of refugee communities to slowly develop independent resources in long-term, protracted situations. Subsistence-level existence is often all that is possible for those who remain in camps for many years, always struggling to access the level of energy they need for their quality of life to be bearable. A subtle politics of life therefore operates in the humanitarian energy sphere. It is clear that humanitarian organisations are ‘apportioning sympathy according to social markers and offering different levels of assistance’ to communities (Scott-Smith 2019: 516). In evaluating the differences between the energy services provided in countries such as Jordan, for example, and energy-access levels in camps in Rwanda and Kenya, it is clear political choices on who deserves more are being made.

Conclusion

The title of this book, *Voices in the Dark*, lends itself to several meanings. Firstly, the more literal: many refugees living within the camps struggle without lighting or power in the night, and they have their lives limited by the darkness this brings. As we have seen, refugees have to slowly improve their own quality of life by securing access to energy themselves. Their voices and opinions are vitally important within their communities, and individual action by families and businesses is the key determinant as to whether refugees live in darkness or not. Indeed – some views and values on energy matter more in refugee settings than others, and organisational modes of governance and the role of institutions are critical in determining energy access.

Secondly, in the figurative sense, institutions and global policy-makers often have limited knowledge and experience of energy within the camps. For them, darkness comes in the form of not seeing the realities of energy. Political choices about energy are unrecognised and value judgements are made, perhaps unconsciously or unintentionally, within humanitarian systems. This too is a form of darkness, created by the often-impenetrable maze of humanitarian action. Institutional darkness often creates literal darkness, restricting the ability of refugees to act formally within the humanitarian system. Refugees are not supported by formal political mechanisms within aid agencies or national governments. The governance of humanitarian energy programming is political, and power (in both senses) has a real impact in refugee settings.

Refugee voices, meanwhile, speak into darkness, which is demonstrated through a lack of knowledge on the part of humanitarians about how refugees use electricity, why it matters to them and how they came to access it. Refugees' voices exist in isolation and, despite their knowledge and existing experience in supplying energy, they are not involved in humanitarian responses on energy except simplistically as beneficiaries. The role of refugee families in organising their own energy is rarely acknowledged, and refugee enterprises are not considered as part of the system providing energy in camps. The contribution of refugees therefore sits in darkness, unacknowledged and undervalued by the humanitarian system. The importance of refugee actions is invisible to humanitarian

providers, and the success of their endeavours dissipates into the darkness and impenetrability of the humanitarian system.

One could argue about which of these forms of darkness matters more: people being without energy or humanitarian interventions that are not informed by the needs of refugees. However, it is likely they are two aspects of the same problem. Humanitarian systems and actors are not yet equipped to hear, or meet, the energy needs of refugees; policy-makers and practitioners have limited experience and knowledge on energy, and do not have systems that can support them to deliver. Households are not involved in these systems or the design of energy programmes, which leaves refugees in the dark or in a position where they have to find their own solutions. When refugee homes and businesses do have access to energy it is often because they have been able to secure and pay for it themselves. Darkness in a refugee energy context has a political dimension: value judgements are embedded within the humanitarian system that creates and prolongs a lack of access to power.

Throughout this book I have made many claims about the importance of energy, including suggesting that energy access is inherently linked to quality of life. In refugee camps energy and the politics of living are as interwoven as a complex tapestry, framed by both humanitarianism and the lived experiences of refugees. I believe that, without considerably more access to energy than is currently available in refugee camps, many improvements in standards of living will not be possible. As a result refugee communities will continue to struggle with the physical and emotional demands created by a life without access to electricity, modern cooking and energy appliances. I hope the material presented throughout this book provides a compelling argument as to why this might be the case, as well as underlining the importance of energy in all our lives.

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