

CLEAN COOKING: STRUCTURING CONCESSIONS FOR DISPLACED PEOPLE



Benoit Moreno (UNHCR) 2016

REPORT 3 OF THE FINANCING CLEAN COOKING SERIES

MECS AND ENERGY 4 IMPACT
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CLEAN COOKING CONCESSIONS IN HUMANITARIAN SETTINGS: THE BIG PICTURE

- Globally, 82.4 million people were forcibly displaced at the end of 2020¹. The biggest camps in the world number over 150,000 refugees and several areas hosting exceptionally large refugee populations can be found in sub-Saharan Africa.
- Cooking with charcoal and wood is the norm in African camps. Not only does this harm the environment, it causes health problems and premature deaths through indoor air pollution.
- Humanitarian agencies are increasingly focused on improving access to clean and safe modern energy cooking solutions in refugee camps.
- Financing models such as subsidies and concessions are needed to make modern energy cooking affordable to displaced people and to attract private providers.
- In a concession, companies bid to supply a clean cooking solution to a refugee camp and host community for a number of years based on a price capped at an affordable level for the local population. The concession fund pays the difference between the capped price and the price of the successful bidder.
- Key factors for selecting a location for a concession in a displacement setting include: high population density, local market activity, ability to establish a local fuel supply chain, attractive local regulations, and the longevity of the population.
- An efficient design for a concession is based on: long-term and flexible donor funding, sufficient de-risking for the private sector, a coordinated approach to fuel provision, a strong contractual framework, and a strategy for phasing out the concession.



Agnes Mwangoka (UNHCR, 2017)

1. UNHCR, Global Trends: Forced Displacement in 2020 (2021).

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Yulshet Tadele (Gaia Clean Energy), 2011

THE FINANCING CLEAN COOKING SERIES

Energy 4 Impact and Loughborough University, the lead implementing partner on the UK aid-funded Modern Energy Cooking Services (MECS) programme, signed an agreement in 2020 to collaborate on research into financing for the clean cooking sector.

The **Financing Clean Cooking** series aims to facilitate the transition to clean cooking through financing and investment. The series is targeted at a diverse range of public and private stakeholders in clean cooking, including NGOs, donors, investors, and suppliers.

Clean Cooking: Structuring Concessions for Displaced People is the third report in the series and looks at the potential for clean cooking concessions in refugee camps and other displacement settings. Building on work completed under the Moving Energy Initiative, the report reviews recent developments in clean cooking in displacement settings and re-examines the attitudes of different stakeholders towards the concession concept. It looks at the opportunities for concessions in different locations, the key ingredients for success, the main risks and risk mitigation strategies, and contractual issues. Finally, it calls on donors to make interventions to develop the clean cooking concession further.

The previous two reports in this series looked at crowdfunding and appliance finance for clean cooking.

GLOSSARY

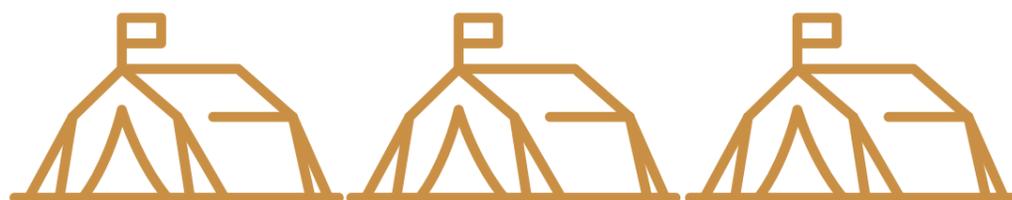
- **Carbon credits** - A form of results-based financing based on certified CO₂ emission reductions. The carbon credits can be traded through emission trading schemes and voluntary carbon markets. The credits can be earned by clean cooking projects by reducing the amount of CO₂ being released compared to a baseline figure, through the introduction of energy saving stoves for example. The credits can then be sold to companies or countries to offset their own carbon emissions.
- **Cash-based transfers** - Money given to vulnerable people to buy products and services in their local markets. It may be given in the form of physical cash, vouchers or mobile money. Cash transfers can be conditional or unconditional. For conditional transfers, the money given can only be spent on certain items, such as food or fuel. For unconditional transfers, the recipient is free to spend the money how they choose.
- **Concession** – An agreement that gives a company the right to sell a given product or operate a business (e.g. modern energy cooking services) in a specified area over a number of years. Private companies bid to supply a clean cooking solution to a refugee camp and surrounding host community for a certain period of time based on a retail price of fuel capped at a level deemed affordable to the vast majority of the population. The concession fund pays the difference between the capped price and the price of the successful bidder which should reflect the true cost of the solution.
- **De-risking** – Refers to efforts to make a business arrangement less risky by allocating certain risks to another party. De-risking can apply to different types of risk, such as financial, offtake, logistical or regulatory risk, and can take the form of grants, offtake guarantees or other types of support.
- **Displaced people** – People who have been forced or obliged to flee or leave their home, often as a result of war, violence, violations of human rights or natural and manmade disasters. This designation can include internally displaced people and refugees: internally displaced people have not crossed any internationally recognised border whereas refugees have crossed at least one international border to find safety in another country and are unwilling to return home due to fears of persecution.
- **Market-based approaches** - Market-based approaches use free market business models to address development and humanitarian challenges in a more sustainable and scalable way². In these systems, low-income people become market actors as either consumers, producers or entrepreneurs within the supply of products and services.

² For more on market-based approaches, see www.usaid.gov/work-usaid/private-sector-engagement/market-based-approaches



- **Mobile banking** - The process of making financial transactions using a mobile phone which hosts applications that receive, store and spend money.³
- **Modern energy cooking solutions** – Households that meet the standards of Tier 4 or higher across all six attributes under the Multi-Tier Framework can be considered to have gained access to modern energy cooking services. In a humanitarian setting, the most relevant modern cooking technologies are likely to be LPG (liquefied petroleum gas), ethanol, biomass pellets with a forced draft gasifier stove and electric cooking.⁴
- **Moving Energy Initiative (MEI)** – An FCDO-funded programme running between 2015 and 2019 that explored ways to improve the management and provision of sustainable energy in displacement settings through a mix of research and testing of approaches on the ground. The clean cooking concession was one of their research topics.
- **Multi-Tier Framework** – The tiered framework developed by ESMAP measures household access to cooking solutions across six attributes with six thresholds of access, ranging from Tier 0 (no access) to Tier 5 (full access). The six attributes are exposure to pollutants, efficiency, convenience, safety, affordability and fuel availability. 'Modern energy cooking services' refer to households meeting Tier 4 standards and higher – see separate definition. 'Improved cooking services' refers to households meeting at least Tier 2 standards across all six attributes, but with at least one attribute not reaching Tier 4.
- **Protracted displacement** - A situation in which refugees or internally displaced people have been displaced for three years or more, and where the process for finding durable solutions, such as repatriation, integration into host communities or resettlement in a third location, has stalled.
- **Results Based Financing (RBF)** – Financing usually in the form of grants provided to companies or institutions after agreed-upon results have been achieved and verified. For clean cooking, a company could receive funds for every stove verified as delivered and in use by an end user. The company has flexibility on how they spend money to achieve the result and the financier disburses funding only when the result has been verified.

³ For more on definitions of mobile money, see www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/06/mobilemoneydefinitionsnomarks56.pdf
⁴ MECS and ESMAP, *The State of Access to Modern Energy Cooking Services* (2020).





INTRODUCTION

Clean and affordable cooking solutions are out of reach for a significant proportion of the global population. Exposure to dirty cooking practices is particularly acute in sub-Saharan Africa where biomass fuels used in rudimentary stoves remain the norm.

Providing affordable modern energy cooking services is particularly challenging for refugees and host communities in displacement settings. Challenges include the vulnerable nature of displaced people, the lack of market and modern fuel supply chains, and the policies that restrict refugees from moving and earning an income.

The Moving Energy Initiative (MEI), which ran from 2015 to 2019, aimed to overcome these challenges and increase adoption

of clean cooking solutions. As part of its work, MEI developed the concept of a non-wood cooking concession in 2017 and 2018. In a concession, private companies bid to supply a clean cooking solution to a refugee camp and surrounding host community for a certain period of time based on a retail price of fuel capped at a level deemed affordable to the vast majority of the population. The concession fund then pays the difference between the capped price and the price of the successful bidder which should reflect the true cost of the solution. **The main difference between concessions and other financing models is that the support is continuous**, rather than being a one-off, and so is better suited for long-term sustainability. This report revisits the concession concept in light of recent developments since MEI was completed.



PROVIDING AFFORDABLE MODERN ENERGY COOKING SERVICES IS PARTICULARLY CHALLENGING FOR REFUGEES AND HOST COMMUNITIES IN DISPLACEMENT SETTINGS.

THE MEI CONCESSION CONCEPT

The clean cooking concession developed by MEI provides ongoing support to the private sector with the aim of improving the long-term sustainability of their operations.

THE MOVING ENERGY INITIATIVE

Between 2015 and 2019, MEI explored ways to improve the management and provision of sustainable energy in displacement settings through a mix of research and testing of approaches on the ground. The programme was implemented by a consortium including Energy 4 Impact, Chatham House, Practical Action, the Norwegian Refugee Council (NRC) and the Office of the United Nations High Commissioner for Refugees (UNHCR). The first phase of the initiative focused on research and evidence-building, while the second phase tested new ways of developing sustainable energy solutions in camps in Kenya and Burkina Faso and in a non-camp setting in Jordan. With funding from the UK Department for International Development (now the Foreign, Commonwealth & Development Office or FCDO), the programme aimed to support the widespread adoption of advantageous new practices, whether in terms of camp management, service provision, business models and private sector engagement or partnerships with local authorities.

Resources produced by the programme can be found here:
<https://mei.chathamhouse.org/>

In this section, we look back at the clean cooking concession concept that was developed through MEI in 2017 and 2018. In 2019, MEI published a report titled *Cooking in Displacement Settings: Engaging the Private Sector in Non-wood-based Fuel Supply*⁵ which explained the concept of a clean cooking concession:

The goal of a cooking concession is to take advantage of the market scale available in a camp or similar displacement setting – given the high population density – to design a viable market solution for deployment of a modern energy cooking alternative at the household level. The concession would subsidize the price of a cooking solution, bringing the price in line with what camp residents and the host community already pay while incentivizing the private sector to view the setting as a viable market (thus reducing barriers to market entry). The proposed concession would cap the retail price of fuel for local residents at a price established as affordable to a large segment of the market. A private-sector supplier would then sell

5. L. Patel & K. Gross, *Cooking in Displacement Settings: Engaging the Private Sector in Non-wood-based Fuel Supply* (2019).

and distribute a cooking solution (both fuel/energy source and the required stoves/hardware) and set up associated operations in the area. It would sell fuel at the capped price, with the cost of the subsidy recovered from the concession mechanism on proof of sales.

The concession would be awarded to the private sector through a competitive tender. A results-based framework would be established based on information provided by the winning bidder, detailing the subsidy required per unit/month, as well as an expectation for total units of sales. Ideally, this would allow the private sector to establish a local market for the fuel, so that the subsidy could be phased out in time. The winning bidder would also be offered various elements of support from the camp authorities in order to help them get established and build the market for the cooking solution, which could include storage facilities and access to community events. It is anticipated that the concession would run for at least three years to allow for a sustainable market to develop. Ideally, private-sector cooking solution providers should see these markets as a business

*opportunity in which they could potentially invest and share the risk of the venture, with support from a concession and partners on the ground*⁶.

The concession is one of a number of donor models that could be used to incentivise private sector engagement in clean cooking in displacement settings and promote the uptake of cleaner cooking solutions and other household energy items. Other models include results-based financing (RBF), upfront grants and subsidising the cooking solutions to displaced people.

The main differentiating factor in MEI's concession model is that it provides ongoing support for the cooking service – rather than a one-off payment – in order to help private sector solutions become sustainable in the long-term. This is particularly important for solutions that may have higher operating costs such as liquefied petroleum gas (LPG) or electricity. Another differentiating factor is the level of effort that goes into the model prior to and alongside the private sector involvement. This includes data collection on market conditions and fuel purchasing habits, gaining stakeholder buy-in and ongoing support with logistics. **While these interventions require additional time and resources, in complicated environments such as displacement settings which may be viewed as high risk by private sector providers, they can be more sustainable and scalable.**

One of the objectives of MEI was to create market opportunities for the sale and distribution of non-wood-based fuels in and around the Kakuma refugee camp and nearby Kalobeyei settlement in northern Kenya. MEI challenged the private sector to design a non-wood cooking concession for the area and presented the findings in their report, alongside case studies of cooking interventions in other displacement

6. See page 14 of the MEI report.

settings. Following discussions with the private sector, MEI initiated a procurement process for the concession and developed supporting documentation. Ultimately, the concession was not implemented due to funding and time constraints, but a small prize was awarded to National Oil Corporation of Kenya (NOCK) for the winning concession design.

The concession design proposed by NOCK involved supplying LPG to the Kakuma refugee camp and the surrounding host community. The concessionaire would support income-generation opportunities and entrepreneurship training for women and youth inside and outside the camp, with participants offered roles in the distribution and exchange of LPG cylinders through local shops. A storage facility would be established in the camp and this would work with a distribution partner already operating there, which in turn would support the establishment of 50-60 local shops. NOCK highlighted the high upfront cost of the LPG kit as a potential barrier to the uptake of the product and proposed a revolving fund to finance household purchases of the LPG kits. Households would be expected to make a 25% down payment for the kits and pay for the balance over the subsequent three months. The concession would run for 24 months and aim to convert 5,400 households to LPG⁷.

We believe that **the concession model is still relevant to the humanitarian cooking landscape in 2021** and the rest of this report examines the key principles and tools needed for a successful implementation. While most of our analysis focuses on camp settings, concessions can also be well suited to non-camp settings where gas and electricity infrastructure already exists to support the uptake of modern energy cooking services.

7. See page 16 of the MEI report for details of the winning design.



RECENT DEVELOPMENTS IN THE HUMANITARIAN CLEAN COOKING LANDSCAPE

Several clean cooking initiatives in humanitarian settings have made progress since 2019, while others have faced setbacks

In this chapter, we look at the most important developments in the humanitarian clean cooking landscape since the MEI work was completed in 2019. Some developments have been relatively successful, while others have faced setbacks. However, they all demonstrate **the continuing importance of finding a workable model for accessing clean cooking fuels**, such as the proposed clean cooking concession model. The main developments are highlighted below:

- In 2019, UNHCR made a public commitment to the clean energy agenda through its first global strategy for sustainable energy⁸ and the launch

8. UNHCR, *Global Strategy for Sustainable Energy, 2019 - 2025* (2019).

of the Clean Energy Challenge⁹. UNHCR identified four strategic action areas: addressing refugee household energy needs from the onset of an emergency; improving access to sustainable, safe and affordable household cooking energy; expanding sustainable household electrification; and expanding sustainable electrification of community and support facilities while limiting overall consumption. One of their key goals is to ensure 'refugees and host communities have sufficient access to safe, sustainable energy to cook three daily meals'¹⁰ by providing them with a selection of energy sources, giving preference to clean modern cooking energy over firewood or other traditional solid fuels. Where

9. For more information, see www.unhcr.org/clean-energy-challenge.html.

10. The UNHCR definition of clean cooking includes improved biomass cookstoves that fall into Tier 2 and above, whereas the MECS programme focuses on Tier 4 and Tier 5 solutions.

possible, this should be coordinated with development and private sector actors to promote access to cooking energy and stoves through local markets and market-based approaches.

- The UNHCR's Clean Energy Challenge aims to provide people in and around camps and settlements with Tier 2 access to electricity and modern cooking by 2030. Tier 2 is the third level of access to clean cooking in the Multi-Tier Framework (see Glossary). The Challenge aims to externalise the UNHCR strategy, acknowledging that this cannot be implemented by UNHCR alone, but the details of how the Challenge targets will be achieved are still being developed.
- Some clean cooking initiatives have been able to scale further since 2019, such as the distribution of LPG in camps in Cox's Bazar, Bangladesh, with more than 1.8 million cylinders of LPG distributed by UNHCR between 2018 and end of 2020¹¹. This has resulted in an 80% reduction of demand for firewood among Rohingya households in the camps, reducing deforestation, amongst other benefits. One of the key lessons from the programme was the importance of introducing fuel efficiency measures (such as the use of pressure cookers) in order to reduce fuel use and associated budgets. Another was the importance of monitoring, evaluation and education to check the performance of equipment and ensure safe and optimal usage of stoves – a point reinforced by a number of recent fires in the camp.
- Other clean cooking projects are described in the report *Landscape Analysis of Modern Energy Cooking in Displacement Settings*, which was published by MECS in February 2021¹². Whilst the majority of these focused on biomass combustion, they did identify five LPG and electric cooking projects in displacement settings in MECS

11. Taken from UNHCR Bangladesh - LPG Tracking Dashboard, December 2020: <https://data2.unhcr.org/en/documents/details/84222>

12. A. Tran, L.S. To & I. Bisaga, *Landscape Analysis of Modern Energy Cooking in Displacement Settings* (2021). For a more recent review of modern energy cooking projects by the same authors submitted to the open-access journal *Energies*, see <https://doi.org/10.3390/en14144176>

focus countries¹³ since 2015. In addition, other projects supporting clean cooking markets and covering displacement settings continue in places such as Kakuma camp in Kenya, the original focus of the MEI concession model – for example SNV's Market Based Energy Access (MBEA)¹⁴ project and the Kakuma Kalobeyi Challenge Fund backed by the International Finance Corporation.

- Some clean cooking projects have faced setbacks and stopped operations. One of these was Sanivation's project in Kakuma, which produced and distributed briquettes made from faecal matter collected through the provision of household toilets¹⁵. The company stopped operating in the camp at the end of 2019 due to insufficient revenues from briquette sales, competition from distribution of free firewood and a lack of funding to reach the required scale. Another was the project of Gaia Clean Energy (formerly Gaia Association) which promoted ethanol fuel in displacement settings in Ethiopia. It has faced several challenges since 2018, including disruptions in the ethanol supply chain and the organisation losing its status as an implementing partner of UNHCR¹⁶ – the status under which the majority of funding for the fuel distribution was provided. Another organisation, Inyenyeri, which supplied pellet fuel in refugee camps in Rwanda, ceased operations and went into liquidation in April 2020¹⁷.

13. The MECS programme focuses on 15 countries of interest situated in the Global South. These countries are divided into Tier 1 and Tier 2 categories, depending on the strength of the connection and relevance to the MECS programme. Tier 1 countries are Bangladesh, Ethiopia, Ghana, Kenya, Malawi, Nepal, Rwanda, Tanzania, Uganda and Zambia. Tier 2 countries are Cambodia, Cameroon, Gambia (the), Myanmar and Nigeria. Taken from <https://meecs.org.uk/about/countries-of-interest/>

14. For further details, see <https://snv.org/project/market-based-energy-access-mbea-project-kakuma-turkana-county>

15. For further details, see <https://sanivation.com/kakuma>

16. Gaia remains an operational partner of UNHCR so can continue to work in the camps through its own resources.

17. For further details, see <https://www.seforall.org/news/lack-of-clean-cooking-access-the-other-public-health-crisis-we-cannot-ignore>



THE UNHCR'S CLEAN ENERGY CHALLENGE AIMS TO PROVIDE PEOPLE IN AND AROUND CAMPS AND SETTLEMENTS WITH TIER 2 ACCESS TO ELECTRICITY AND MODERN COOKING BY 2030

IMPLEMENTING CONCESSIONS

The key to a successful concession for clean cooking is to choose the right location and to design it so that risks are allocated to those best able to handle them.

In this section, we examine the opportunities and challenges for implementing clean cooking concessions in displacement settings. Which locations are best for a concession and what data needs to be collected before starting a concession? What are the most important design features for a successful concession? Who are the key actors in a concession and how should the contractual arrangements work?

THE OPPORTUNITY FOR ACTION

By the end of 2020, **82.4 million people in the world were forcibly displaced**, many of them within their own countries. Of this total, 26.4 million were refugees, with Turkey, Columbia, Pakistan, Uganda and Germany the countries hosting the most refugees¹⁸. Many of the individual refugee camps such as those described below have dense populations and are potentially good locations for introducing modern cooking solutions at scale:

- The Cox's Bazar region of Bangladesh (where an existing LPG programme is in operation) hosts over 800,000 refugees in a number of subsidiary camps
- The Bidi Bidi refugee settlement in Uganda hosts over 236,000 refugees (March 2021)¹⁹
- The Kakuma refugee camp and nearby Kalobeyi settlement in Kenya host 210,000 people (May 2021)²⁰
- The Dadaab refugee complex in Kenya hosts 225,000 people (May 2021) across 3 subsidiary camps²¹
- Approximately 169,000 refugees live in the five Dollo Ado camps in Ethiopia (June 2021)

18. UNHCR, *Global Trends: Forced Displacement in 2020* (2021).

19. Figure cited here: <https://data2.unhcr.org/en/documents/details/87141>

20. Figure cited here: <https://data2.unhcr.org/en/country/ken/796>

21. Figure cited here: <https://data2.unhcr.org/en/country/KEN/794>

- New refugee crises continue to emerge such as the one in the Tigray region of Ethiopia which has resulted in more than 60,000 refugees arriving in Sudan since November 2020²²

In some places, **government legislation and regulations exist to discourage or ban the use of biomass fuels**, either for the country as a whole or particularly for displacement settings²³. As this increases the cost of biomass fuels and forces humanitarian agencies to look for modern fuel sources, a concession could support them in these efforts. The concession could cover institutions and schools as well as households in the refugee camp, increasing the potential market for the concessionaire.

INGREDIENTS FOR SUCCESS

In this section, we look at the key success factors for clean cooking concessions, including the choice of displacement setting and the design of the programme.

The most important criteria for selecting the displacement setting are:

- **Dense population** of displaced people, with current reliance on biomass fuels and some **ability to make a financial contribution**
- Ability to establish a **robust modern fuel supply chain**, and for that modern fuel to eventually be cost competitive versus other fuels
- Attractiveness of **local regulations for refugees**, e.g. right to earn income and move around

Other factors that could support the concession include:

- **Existing market activity** in the displacement setting
- **Existing clean cooking providers** in the country
- The **longevity of the displacement setting** – this should ideally be a 'protracted displacement' (see Glossary) and there should be no immediate prospect of the situation changing

22. For further details, see <http://www.unrefugees.org/news/inside-the-world-s-five-largest-refugee-camps/>

23. In October 2018, the Government of Rwanda issued a directive to stop the distribution of firewood in refugee camps in order to transition to alternative clean cooking solutions and stop deforestation.

- **Stable security** in and around the displacement setting
- **Local government regulations discouraging use of biomass fuels**
- Existence of **cash transfer schemes** which can be used for the clean cooking solution
- Existence of **mobile banking** which makes it easier to direct subsidies to target beneficiaries through mobile money

Based on these factors, Uganda, Kenya, Ethiopia, Tanzania, Nigeria, Cameroon and Sudan could be promising countries for clean cooking concessions.

The other key ingredient in a concession is the programme design. Based on our research, we would make a number of recommendations:

- **Length of concession:** The concession needs to be long enough (minimum 3-5 years in the first instance and ideally longer) to allow concessionaires to build the required distribution infrastructure, establish a market, and get a return on their investment. The concession funding also needs to allow for planning and the time taken to acquire customers.
- **Flexibility:** The donor should be flexible with the funding and support on offer, given that the concession is a novel, high-risk idea. It will be important to test, learn and make iterative changes as the concession progresses.
- **Funding amount:** The funding required depends on the clean cooking technology, the proposed price cap for the location, the local prices for fuel and energy, and the target number of household beneficiaries. The funding can initially be small, but we recommend that a strategy for scale-up is developed from the outset.
- **Role of humanitarian agencies and local government:** The local humanitarian agencies need to actively support the implementation of the modern fuel cooking solution (e.g. access to camps, logistics and

warehousing, marketing and consumer awareness raising, registration of end users). It is also important that they do not fund free handouts of biomass fuels and stoves alongside the concession. Support from both the HQ and country office of the agencies will be critical in this regard. Support from local government will also be important, particularly for concessions in urban or peri-urban settings.

- **Contractual arrangements:** The concession must be underpinned by robust contractual arrangements which outline the roles and responsibilities of the different parties and ensure they meet their obligations.
- **Financial support and guarantees for the concessionaire:** The private sector is likely to demand that the concession donor assumes certain risks and provides additional financial support prior to making significant investments in infrastructure. Donors will probably need to offer some financial guarantees to concessionaires (e.g. minimum offtake guarantee), at least in the early years of a concession.



BY THE END OF 2020, 82.4 MILLION PEOPLE IN THE WORLD WERE FORCIBLY DISPLACED, MANY OF THEM WITHIN THEIR OWN COUNTRIES.

- **Long-term financing:** It will be important for the sustainability of the project that the private concessionaire has access to long-term funding sources outside the concession, for example carbon credits or working capital facilities, and possibly insurance products. The concession should fund the development of these efforts, e.g. external expertise and registration of carbon credits²⁴.
- **Other concession costs** – Apart from the subsidies to households, the concession will need to cover the costs of the humanitarian agency's implementation support, the management fees of a concession administrator, the cost of surveys and local market data gathering, the development of tender documents and contracts, and the costs of ongoing technical assistance.
- **Host community:** The concession needs to target vulnerable members of the host community as well as refugees.

Our research suggests that the private sector is broadly positive about the concession model. However, **without financial incentive and support to increase the ability of displaced populations to pay, many companies viewed displacement settings as not a priority and too risky**, compared to other more accessible locations.

Concessions can potentially open up the market and allow private companies to bring new solutions to these settings. Key priorities highlighted by the companies include the population density of the camp, the length of the concession, and the need for financial guarantees prior to them making substantial investments for delivering cooking solutions at scale. The companies were also keen for humanitarian actors to support in

24. One example of the use of carbon credits to provide long-term funding for fuel switching is that of the Practical Action LPG project in Sudan. In this project, funding from carbon credits was used to establish a revolving fund to provide loans for the upfront cost of LPG fuel and cooking equipment. For further details, see page 8 of the article 'Cooking Innovations in Humanitarian Settings' by the Global Alliance for Clean Cookstoves: <https://www.cleancookingalliance.org/binary-data/RESOURCE/file/000/000/473-1.pdf>

the implementation of concessions, particularly around logistics and fuel distribution.

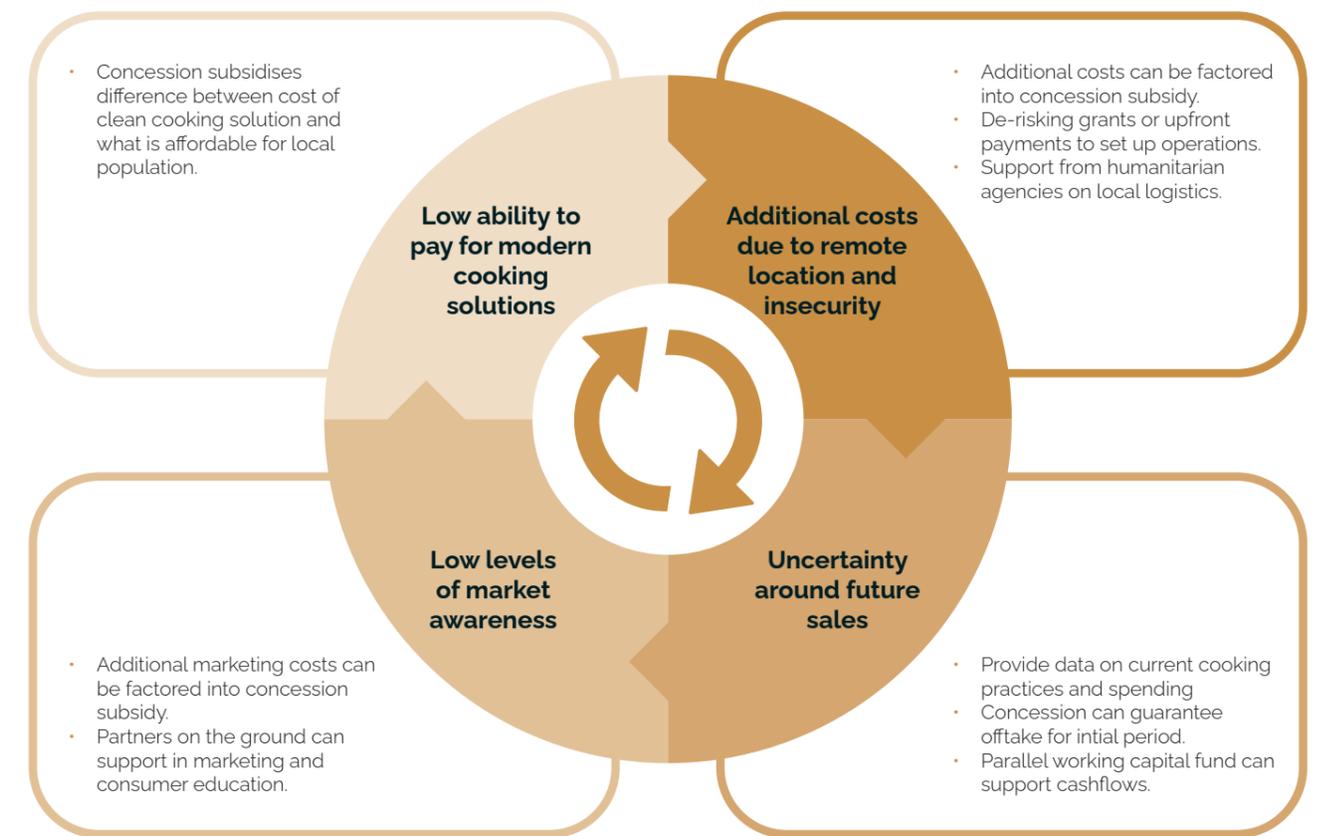
Our research suggests **humanitarian actors are also keen for the private sector to lead the implementation of modern energy cooking solutions, but still envisage playing an important role in this process**. They recognise that entering displacement settings is complicated and the right incentives need to be in place for the private sector. While humanitarian agencies are willing in principle to support the private sector in logistics and warehousing at the start of a concession, they expect this support to be phased out over time.

In conclusion, there remains a strong need to develop models that can attract the private sector and promote uptake of clean cooking solutions at scale. The private sector and humanitarian actors remain supportive of the concession model, but structural challenges exist that must be overcome to get the full backing of stakeholders and the best conditions for success.

SUPPORTING THE PRIVATE SECTOR

In this section, we look at some of the market challenges faced by the private sector in delivering clean cooking solutions in displacement settings. Figure 1 summarises them and shows how they can be overcome through a concession structure.

Figure 1: Market challenges for clean cooking in displacement settings and the role of concessions in overcoming them



One of the biggest challenges for the private sector is sales risk. While the concession addresses the household affordability issue by subsidising the cooking solution, it does not guarantee the volume of sales to households, at least not in the original model proposed by MEI. The question is who should bear the sales volume risk – the concession funder or the private concessionaire? – and at what point the concession model is sufficiently proven to pass risks onto the private sector.

Feedback from the MEI programme suggests that the private sector would be reluctant to take on much sales risk at this point, given the high risks of setting up operations in a displacement setting. In the original MEI concession model, the subsidy was supposed to be paid out based on sales to end users and many private companies responded to this by asking for a guaranteed offtake.

Further discussions between stakeholders around this point are needed to find a balanced solution. Once the concession has been tested and proved, it could

be argued that the private sector is best placed to manage the sales risk because they are doing the selling. However, we are still some way from that scenario. One solution could be to provide a guarantee offtake for the first 6-12 months of the first concession – this was the case in Bangladesh where UNHCR bought the fuel directly from the private sector. Other potential solutions include working capital facilities, initial de-risking grants or returnable grants for setting up operations that run alongside the concession.

The second big challenge is fuel distribution or, more specifically, building a robust fuel supply chain in a remote and potentially insecure location.

An unreliable fuel supply can deter households from making sustained use of cleaner fuels and cause them to revert to biomass. Fuel supply can be affected by numerous factors: bad or inaccessible roads causing delays and vehicle breakdowns, deliveries being affected by poor communications networks, and regional infrastructure being patchy or vulnerable to attack.

The camp authorities have a key role in supporting the fuel distribution through warehousing and other logistical support. They will also need to switch all fuel distribution to the clean cooking solution as soon as feasible, while stopping distribution of traditional biomass fuels such as firewood, as the persistent availability of biomass will hinder the uptake of cleaner fuel options.

Another challenge is the length of the concession. **It needs to be sufficiently long to allow the private sector to build the required distribution infrastructure for a modern cooking solution and to make a return on their investment.** However, donors are often reluctant to fund subsidies over a long period (say over 5 years) and may prefer to offer larger subsidies upfront, meaning that the funding available in the early years of the concession needs to be high enough to cover later years.

The concession needs to allow time to **gradually reduce or phase out subsidies and transition to longer-term funding sources.** There is a risk that removing subsidies could result in people stopping buying fuel and the private sector closing down the business. It could also result in local protests²⁵, especially when the fuel is essential for basic living.

Subsidies could be reduced as the costs fall due to economies of scale²⁶ or the initial hardware and infrastructure costs are repaid. Much depends on the type of technology and the cost of hardware versus ongoing fuel costs. For example, the subsidies for LPG could be lowered once the costs of the LPG cylinder and stove have been repaid, but there may still be a need for an ongoing subsidy for the fuel. For standalone solar PV cooking technology, the costs of the hardware are very high, but there are no ongoing fuel costs once the hardware costs have been repaid. Another option would be to gradually replace the concession subsidy with alternative, longer term funding

25. For examples of protests in India in 2017 against removal of LPG subsidy, see www.telegraphindia.com/north-east/protest-on-lpg-subsidy-removal/cid/1437183. Further information on deadly protests in Rwanda after cuts in camp rations can be found here: www.reuters.com/article/us-rwanda-congo-refugees/rwandan-police-fire-teargas-to-disperse-congolese-refugees-protesting-food-rations-cuts-idUSKCN1G623H

26. One example of economies of scale could be that an LPG distributor invests in a local refilling plant once a given number of customers are secured in that region. This would reduce transport costs for returning and delivering cylinders.

mechanisms such as carbon credits or other forms of climate financing. The costs of setting this up, including external advisors, could be covered as part of the concession funding.

Local culture plays an important role in the success of the concession. **To encourage sustained use of cleaner fuels, it is critical to understand the prevailing local cultural preferences around cooking,** engage end users in the concession design and be able to show them the benefits of switching fuel over time. It is also important to consult traditional fuel businesses and explore alternative employment opportunities for them, either in the new fuel value chain or elsewhere. Finally, there is a need to link energy and cooking interventions with livelihood support, so displaced people can increase their income and reduce the need for subsidies in the long run.

The existence of **cash transfer programmes and mobile banking can help the development of cooking interventions in a displacement setting.** In cash transfers, refugees are given cash or vouchers which they can spend locally on essential items. They can choose what they buy and therefore have a greater sense of ownership.

The cash or vouchers could potentially be transferred through mobile money platforms and tied to the purchase of fuel. Such an approach could fit well in a concession, with vouchers being given directly to end users based on the subsidy required for the cooking solution. The vouchers could also be used to target vulnerable members of the host community, rather than offering a blanket subsidy which could lead to market distortions. Reallocating any budget currently used for biomass fuels (e.g. firewood) into a cash transfer scheme for the clean cooking solution could also have two benefits: it would reduce the funding required for the concession over time and it would strengthen the commitment of the camp authorities to the project.

Table 1 summarises the potential risks and mitigation strategies for private concessionaires.

Table 1: Risks and mitigation strategies for concessions

RISK	MITIGATION STRATEGIES
Private sector is unwilling to invest in clean cooking solution due to the high level of risk, particularly revenue or demand risk (demand ramps up too slowly or overall demand is insufficient)	<ul style="list-style-type: none"> Build additional de-risking mechanisms into pre-packaged support of the concession Concession will only be awarded to one supplier giving them more market influence Consider guaranteeing offtake for initial period or some other form of financial support for first concessions Encourage the camp institutions and schools to switch to the clean fuels supplied through the concession if demand from households is insufficient
Low demand for clean cooking solution due to continued distribution of free firewood by humanitarian agencies and other cooking interventions	<ul style="list-style-type: none"> Agree with camp authorities and other humanitarian agencies to run fuel distribution through the concession
Significant time and resources required to set up new fuel distribution networks and create a market for the fuel	<ul style="list-style-type: none"> Allow sufficient time in the design of the concession to establish a fuel distribution network Identify locations for concessions with existing fuel distribution networks and expand these if practical
Potential funding gap after clean cooking solution is established and concession is phased out	<ul style="list-style-type: none"> Explore options for phasing out subsidy gradually Explore sources of continuous funding such as carbon credits. Include the registration costs for carbon credits and related technical assistance in the concession
Humanitarian agencies do not provide sufficient support or cannot be held accountable for their role in the project	<ul style="list-style-type: none"> Get buy-in from humanitarian agencies both at HQ and local level and ensure that their costs can be covered through the concession budget Link concession goals back to UNHCR strategy on sustainable energy to build support Sign agreement with local humanitarian agencies outlining their roles and responsibilities, including logistics support, access to camps and facilities, and marketing
A blanket subsidy on fuel in the target location could distort the market and lead to subsidized products being purchased by those outside of the intended beneficiaries Large scale displacement of traditional fuels could reduce income for local businesses and create tensions	<ul style="list-style-type: none"> Use mobile technology and cash-based transfers to deliver subsidies to target beneficiaries and to monitor the programme more easily Consult relevant stakeholders in the fuel value chain to understand and mitigate negative impacts on traditional fuel businesses Incorporate existing fuel sellers into new value chains where possible or provide alternative income generating opportunities
Health, safety and security issues around infrastructure and cooking equipment, including handling and use of fuel	<ul style="list-style-type: none"> Locate infrastructure in humanitarian agency facilities and compounds to reduce security risk Conduct extensive training and awareness raising on safe handling and use of fuel and equipment Concessionaire required to demonstrate experience and high levels of awareness in health, safety and security issues
Quality of the product or service provided under the concession may deteriorate over time	<ul style="list-style-type: none"> Link concession incentives to pre-agreed quality standards Conduct regular quality checks throughout the concession period
Other potential changes to concession incentives for both fuel and hardware e.g. devaluation of local currency	<ul style="list-style-type: none"> Negotiate allocation of risks with private concessionaire during contract negotiations

CONSIDERATIONS FOR DONORS

In the previous section, we looked at the needs of the private concessionaire. In this section, we look at the concession from the donor perspective, including the amount of subsidy required and choice of clean cooking technology.

To calculate the required concession subsidy, it is necessary to determine the price cap, i.e. the price of fuel deemed affordable by a majority of households in the given location. Data for this would need to come from surveys on local cooking and spending patterns. The surveys would need to be completed by the concession administrator at the start of the programme and would form part of the tender documents shared with the private sector. Consideration would also need to be given into other longer-term revenue streams for the concession, for example carbon credits or other climate financing mechanisms. The concession administrator could potentially provide financial support and technical assistance on the registration of carbon credits or other climate financing mechanisms.

The final design of the concession and level of subsidy ultimately depends on the clean cooking fuel selected for the concession. It is difficult to accurately calculate the cost of cooking with different energy sources and depends on factors such as the technology used, the quality of the fuel, the quantity and type of food being cooked and other usage factors. In addition, the cost of fuels will vary between locations based on the supply chain, local taxes and subsidies and other logistical factors. In displacement settings where modern fuels such as LPG and electricity are not widely available, a lot of these factors may be unknown.

Our research shows **big differences in the cost of fuel and subsidy required depending on the location. We estimate that the subsidy required over 3 years for a concession in a remote area targeting 20,000 households could range from \$2.3 million to \$10.8 million.** While concessions appear expensive compared to other financial support mechanisms such as RBF, this is because they cover the

running costs of the programme as well as the upfront costs of the hardware. The level of subsidy is also likely to be higher due to the limited capacity of displaced people to pay. The subsidies required in urban centres are likely to be lower than those in remote camp settings because modern fuels are generally cheaper and more available there.

Most of the work on concessions so far has focused on LPG and other modern fuel technologies. In theory, electric cooking could also be well suited to a concession model. It does not require the same ongoing logistical support as modern fuels and proven technology exists to track consumption and payments making it ideal for targeted subsidies. However, it also requires an existing electricity distribution network and, with a few notable exceptions²⁷, very few settlements for displaced people currently have grid electricity.

CONTRACTUAL ARRANGEMENTS

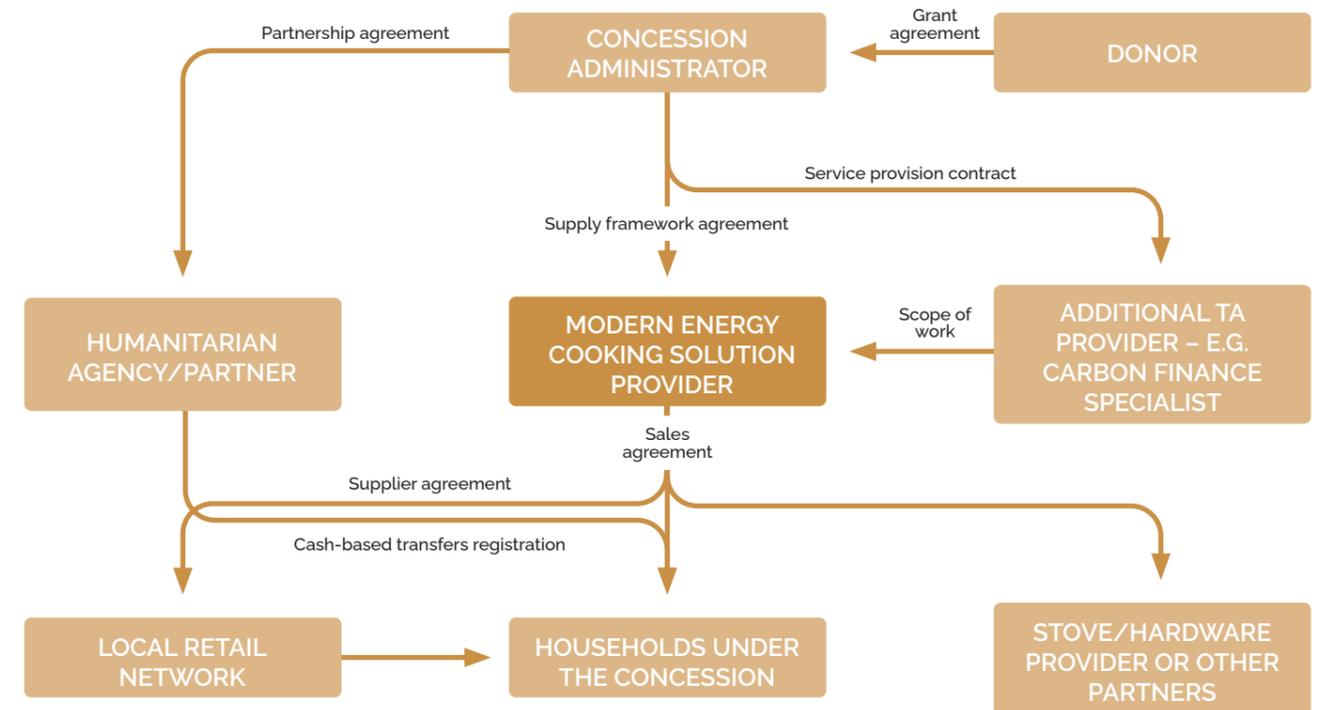
It is vital that the concession is underpinned by robust contractual arrangements which outline the roles and responsibilities of the different actors and ensure they meet their obligations.

Figure 2 shows the main actors in a clean cooking concession and the different agreements between them. Some of the key agreements include:

- Supply agreement between the privately-owned modern energy cooking solution provider or concessionaire and the concession administrator
- Partnership agreements between the local humanitarian agencies and the concession administrator
- Agreement between the donor and the concession administrator
- Agreements between the private concessionaire and local retailers, households, and suppliers of cooking equipment
- Technical assistance agreement for the concessionaire, for example on carbon credits

²⁷ Examples of exceptions include urban areas and a few camps that are linked to national grids and mini-grids.

Figure 2: Main actors and agreements in a concession



The most important contracts are likely to be issued and overseen by the party that administers the concession funding. We recommend that donors appoint an independent administrator for the concession – perhaps a consultancy or NGO – and that this administrator is not connected to the local humanitarian agencies. The administrator can act as an honest broker between the private concessionaire and the humanitarian agencies. Having an independent administrator also reduces the need for contracting with the humanitarian agencies whose ability to enter long-term, non-standard agreements may be limited.

The single most important contract in a concession is the supply contract with the private provider of the cooking solution. Key issues for the supplier include the level of subsidy, the length of the concession, the potential for changes in the refugee camp over time, the support role of the humanitarian agency, the offtake arrangements for the fuel and termination clauses. For example, the supply contract needs to address what happens if the number of people in

the camp reduces, or the humanitarian agency stops operations, or there are interruptions in the fuel supply chain. Also important is the implementation agreement with the local humanitarian agencies, which outlines their roles and responsibilities, e.g. access to the camp and facilities, provision of logistical and warehousing support, marketing and consumer awareness-raising, alignment of fuel distribution and coordination with other energy initiatives, support with local stakeholder relations and establishing a cash transfer scheme.

We envisage the concession being awarded through a competitive tender, so tender documents would need to be developed. The documents should define the characteristics of the local cooking market and the problem that needs to be addressed, but let the bidders propose their own solutions. It is likely that the tender documents would require bidders to submit a business plan including sales projections and strategies for scaling up operations and phasing out the subsidy by the end of the concession.

CALL TO ACTION

Humanitarian actors face many crises around the world and address these with the provision of essential items including food, water and shelter. Yet finding ways for people to cook their food in a clean, safe and affordable manner remains a huge challenge for the humanitarian sector, one that will need to be supported through new partnerships, innovative funding models and increased donor funding.

The clean cooking concession proposed in this report is one of the potential solutions. We encourage donors, humanitarian actors and clean cooking companies to continue their dialogue on concessions and to identify high potential locations for concessions. Hopefully this can lead to the development of detailed designs for concessions on the ground, including the analysis of the subsidies required for different cooking technologies and the drafting of tender documents and contract templates. Ultimately, we would like to see more donors fund the implementation of such models.

This report has focused on clean cooking concessions in camp settings with high

population densities where interventions are needed to overcome displaced peoples' limited ability to pay. However, it is also important to consider concessions in non-camp settings given that 60% of refugees and 80% of internally displaced persons live in urban and peri-urban areas outside of camps²⁸.

Historically, urban refugees have been overlooked by humanitarian agencies, but during the last decade UNHCR has enacted policies that aim to redress this imbalance²⁹. While the density of displaced populations in urban areas may be lower, there is more potential to get competitive modern fuel offerings due to the larger number of players in the market and the higher prices for firewood and charcoal. In addition, the electricity and gas infrastructure often already exists in these areas. Improving the supply of modern energy solutions in urban settings is likely to benefit more in the host community - even those that are not directly receiving the subsidy will benefit from increased availability of products - and therefore potentially garner more support from local government and municipalities.

28. Taken from A. Tran, L.S. To & I. Bisaga, *Landscape Analysis of Modern Energy Cooking in Displacement Settings* (2021).

29. This has mainly been done through the 2009 UNHCR policy on refugee protection and solutions in urban areas accessed here: <https://www.unhcr.org/protection/hcdialogue%20/4ab356ab6/unhcr-policy-refugee-protection-solutions-urban-areas.html>. The 2014 UNHCR policy on alternatives to camps can be accessed here: <https://www.unhcr.org/5422b8f09.html>.

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ABOUT ENERGY 4 IMPACT

Energy 4 Impact is a non-profit organisation that works to increase the quality of life for people in developing countries through access to energy, including clean cooking. We provide operational, financial and technical advice to accelerate the growth of private sector businesses that deliver energy access. For more information on our work, please refer to www.energy4impact.org.

ABOUT MECS

Modern Energy Cooking Services (MECS) is a five-year programme funded by UK aid which aims to spark a revolution through rapidly accelerating the transition from biomass to clean cooking on a global scale. By integrating modern energy cooking services into energy planning, MECS hopes to leverage investment in renewable energy (particularly in electricity access, both grid and off-grid) to address the clean cooking challenge. Modern energy cooking is tier 5 clean cooking, and therefore MECS also supports new innovations in other relevant cooking fuels such as biogas, LPG and ethanol. The intended outcome is a market-ready range of innovations (technology and business models) which lead to improved choices of affordable, reliable and sustainable modern energy cooking services for consumers. We seek to have the MECS principles adopted in the SDG 7.1 global tracking framework and hope that participating countries will incorporate modern energy cooking services in energy policies and planning.

For more information, visit www.mecs.org.uk

