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EnDev Market-based Energy Access Project in Kakuma refugee camp & Kalobeyei integrated settlement, Kenya



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Developing sustainable energy value chains in displacement contexts

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Background

MBEA was designed to **drive a shift from a humanitarian approach to meeting energy needs of refugees to a market-based approach** using commercial approaches to energy provision through addressing market barriers in Kakuma Refugee Camp and Kalobeyei Integrated Settlement.

Highlights:

- Implemented **since 2017**
- Supported sales of close to **12.000 solar lanterns and SHS** (and 5000 clean cookstoves) to date
- **38,000 people reached** with access to electricity
- **375 jobs created** among value chain
- **6 solar companies** (and 4 clean cooking companies)

Kakuma refugee camp & Kalobeyei integrated settlement:

- Located in Turkana County, Northern Kenya
- Established in 1992
- Current population: 200,000 refugees/38,300 households
- Countries of origin: Somalia, Sudan, Ethiopia, DRC, Burundi, etc.

East Africa



Hydro



Grid extension



Cooking energy



Solar



Biogas

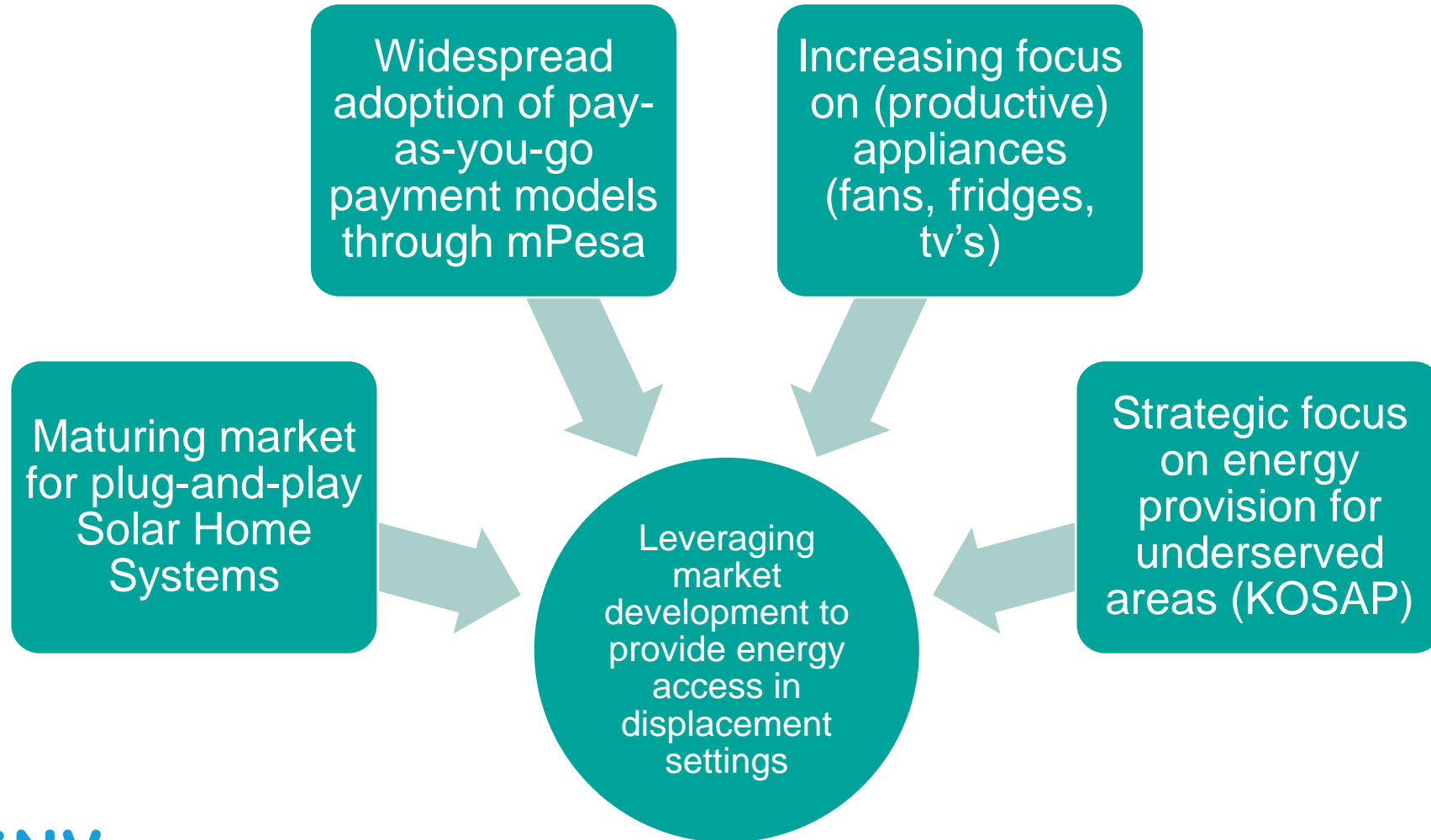
Demand side assessment

Energy access in Kakuma & Kalobeyei

- Lack of grid access for households and businesses in Turkana County as a whole
- Kakuma town is powered through a Kenya Power operated diesel mini-grid
- No formal electricity access in the camps
 - Informal diesel mini-grids are common
 - Sub-standard wiring and high cost of electricity
- Increasing amount of mini-grids
 - Hybrid solar/diesel mini-grid built by Renewvia with EnDev support in Kalobeyei (80 kW)
 - Okapi Green Energy mini-grid in Kakuma 3
- Solar has become a key source of lighting (over 40%)

Supply side analysis

Kenya country context off-grid energy



Technical solutions

Stand-alone solar solutions

- **Households:**
 - Lanterns (1-5W)
 - SHS (10-200W)
- **Businesses**
 - Plug-and-play SHS (10-200W)
 - Lighting, phone-charging, TV's
 - AC stand-alone solar systems (200W-2 kW)
 - Fridges, barber-kits, multi-media



Partnerships

- **UNHCR**
 - Close collaboration on strategic and implementation level
 - **Turkana County government**
 - Informing strategy for energy access in Turkana county
 - **Humanitarian organizations**
 - Involving in transition to market models for clean energy
 - Finding synergies in programming
 - **Private sector**
 - Supporting companies to establish operations in the camp
 - Working with local entrepreneurs to build sales networks
- Other development programs**
- Kenya Off-Grid Solar Project (KOSAP)
 - Kakuma Kalobeyei Challenge Fund (KKCF)



- Sponsor and Funder

Power Supply

Humanitarian Services Providers



Lessons learned and best practices

- Ensure **commitment of private sector** in building a sustainable value chain in a refugee setting
- Be **flexible and adaptive** in the types of support measures provided to partners
- **Involve host and refugee community** in executing the project and activities
- All **stakeholders** must be included and willing to commit to achieving the transition to a market-based model for energy access.
- Coordinate closely with partner organisations to maximise **synergies** and **complementarity** of interventions.
- Complement **marketing efforts** with **awareness raising** and **sensitisation** to increase acceptance and adoption of clean energy products.
- Address **access to finance barriers** and payment challenges.

Reports

- Reports:

Promoting Market Based Energy Access for Cooking and Lighting in Kakuma Refugee Camp - Experiences and lessons learned - [Report](#)

Access to Energy for (Micro) Businesses in Kakuma Refugee Camp and Kalobeyei Integrated Settlement - [Report](#)

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Thank you

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