



Webinar 2

**Understanding development opportunities,
needs and aspirations of people –
Maximizing Impacts from Energy Access**

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Understanding development opportunities, needs and aspirations of people – Maximizing Impacts from Energy Access



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Emmanuel Cyoy Ngeywo
Consultant on EDM

Understanding development opportunities, needs and aspirations of people – Maximizing Impacts from Energy Access

Moderator:

Dr. Willington Ortiz

Researcher at the Wuppertal Institute

Project collaborateur at WISIONS Initiative

Responsible for regional partnerships





Sen's capability approach

Functionings: “... ability to do certain things and to achieve certain types of beings (such as being well nourished, being free from avoidable morbidity, being able to move about as desired, and so on)“

“A person's capability can be seen as the set of alternative functioning n-tuples any one of which the person can choose.”

The valuation Problem:

- Valuation of Functionings may differ from one person to other (value heterogeneity)
- Change involved in development alter also the valuation of the people involved (value endogeneity).

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Panelist:

Emmanuel Cyoy Ngeywo

Consultant on Energy Model Delivery (EDM)



“Maximizing Impacts from Energy Access”

Understanding development opportunities, needs and aspirations of people

Example of energy planning at sub-national level in Kenya

By

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Energy for Development



Planning sustainable energy services for last-mile communities

Source; CAFOD

Delivering energy to last-mile communities by 2030



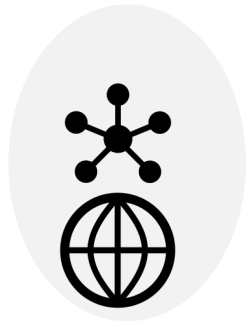
Access to modern energy can help lift people out of poverty by lighting & heating homes, powering schools, health clinics, farms & businesses. It can also help address climate change and gender inequality.



The Problem



Billions of people living in 'last mile' lack modern energy



Energy poverty is multi-dimensional - local contexts vary



Energy planning is top-down, 'one-size-fits-all' & starts with technology



Little attention to wider needs & socio-cultural factors



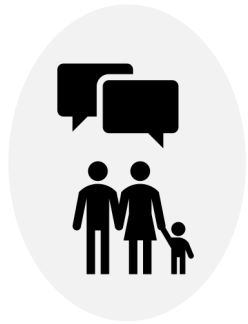
Lack of financial, social & environmental sustainability



The Solution - building viable 'delivery models'



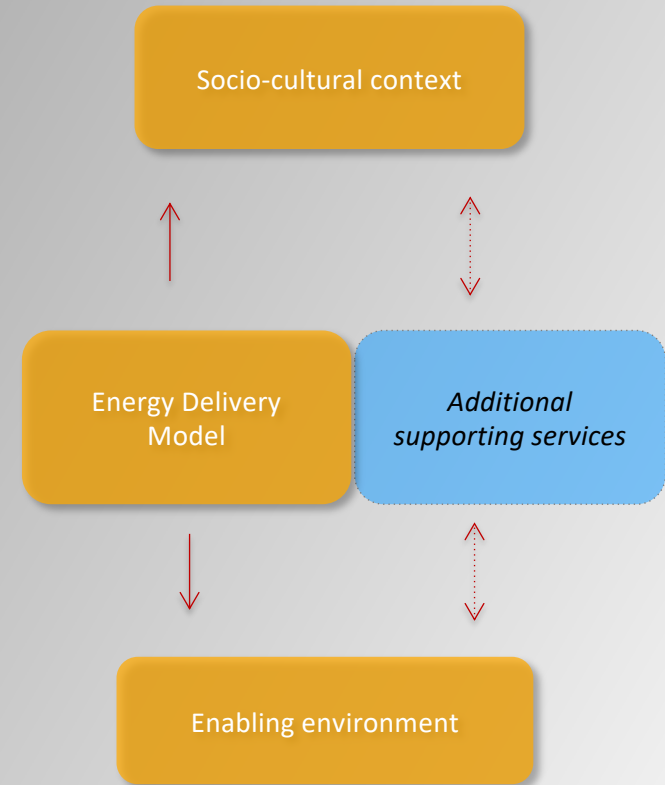
Start from last-mile end users' wider development needs & 'gaps'



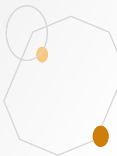
Use inclusive planning to build understanding & buy-in



Integrate financial, social & environmental sustainability to maximize impact



The four building blocks of a viable energy service



What is energy delivery model?

Delivery model- implies core activities, inputs and actors needed to deliver energy services

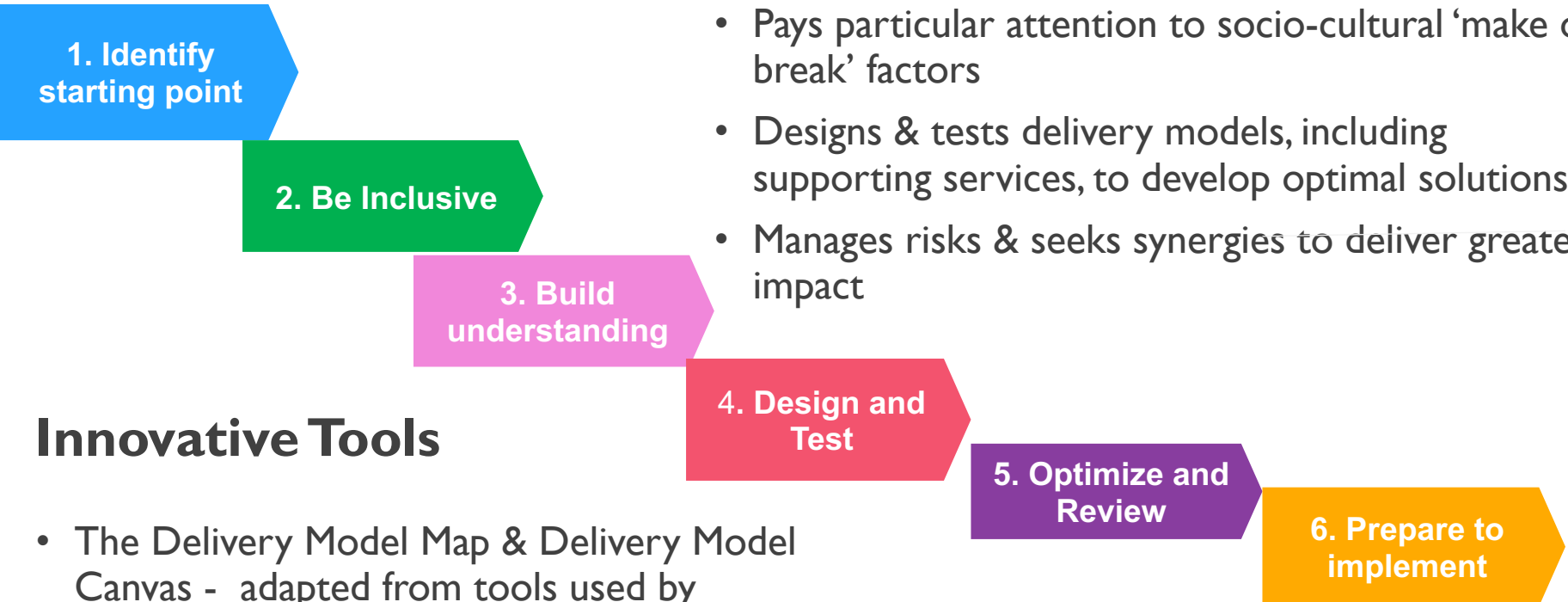
EDM aims to ensure the service is appropriate to the local context, meet end users' wider needs and is financially, socially and environmentally sustainable, to deliver maximum impact.

The toolkit can be used to design new modern energy services as well as reflect on and improve existing services

The EDM Toolkit

Six-step problem-solving process

- Inclusive - identifies end users' priority needs & energy/non-energy 'gaps'
- Iterative – questions assumptions & co-creates solutions
- Maps key stakeholders & enabling environment
- Pays particular attention to socio-cultural 'make or break' factors
- Designs & tests delivery models, including supporting services, to develop optimal solutions
- Manages risks & seeks synergies to deliver greatest impact



Innovative Tools

- The Delivery Model Map & Delivery Model Canvas - adapted from tools used by businesses to design services & products

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Energy Action Partners,
Co-Executive Director





COMET

COMMUNITY ENERGY TOOLKIT

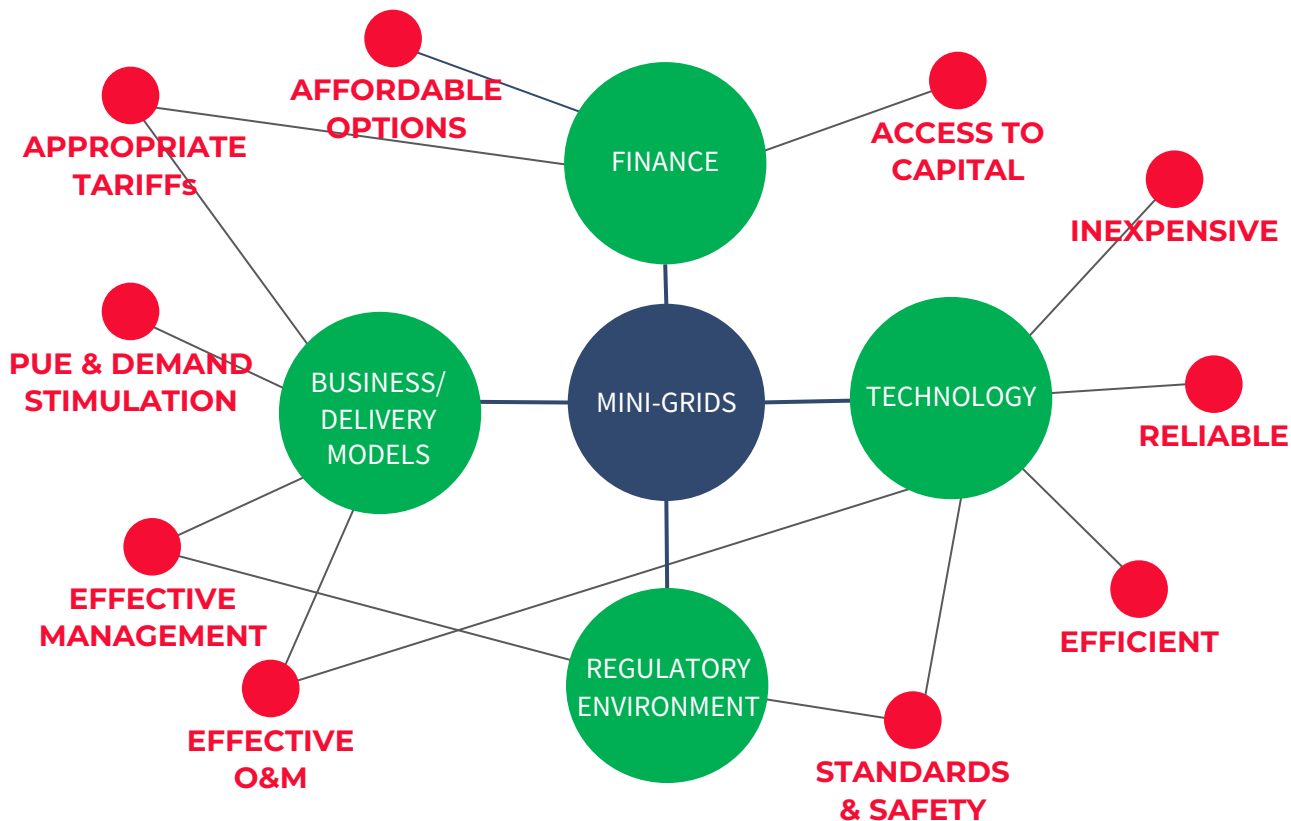
**COMMUNITY ENGAGEMENT & PARTICIPATORY
APPROACHES TO COMMUNITY ENERGY**

June 2, 2022 | Ayu Abdullah



Energy
Action
Partners

DOMINANT PRIORITIES IN MINI-GRIDS



GAPS IN MINI-GRID DISCOURSE:

- ✗ Technological systems are **messy, complex, socially constructed** and **society shaping**. (Hughes 1987)
- ✗ Innovation, tools, methods focus on supply and distribution of electricity, and **not end user or demand-side solutions**.

WHAT IS & WHY COMMUNITY ENGAGEMENT?



INVOLVEMENT AND BUY-IN FROM COMMUNITY IN PLANNING AND MANAGEMENT LEVERAGES LOCAL CAPACITY, AUTHORITY AND INSTITUTIONS, WHICH MAKES A SYSTEM MORE RESILIENT TO CHALLENGES.

EDUCATING COMMUNITY IMPROVES USER COOPERATION AND ENHANCES THEIR ABILITY AND MOTIVATION TO LOOK AFTER THE SYSTEM.

OBTAINING AND RECEIVING INFORMATION FROM THE COMMUNITY LEADS TO BETTER SYSTEM DESIGN.

SOCIO-TECHNICAL CHALLENGES MITIGATED BY COMMUNITY ENGAGEMENT:

- ✗ Poorly sized system
- ✗ Insufficient revenue & savings
- ✗ Load curtailment conflicts
- ✗ Poor maintenance
- ✗ No productive use

A PARTICIPATORY APPROACH



COMET

COMMUNITY ENERGY TOOLKIT

a **software-based demand exploration toolkit** for mini-grid developers.

Human Capability Approach

- Who chooses?
- How are these choices made?

Mini-grids as a Common Pool Resource



SIMULATE MINI-GRID OPERATIONS WITH COMMUNITY INPUT



BUILD END-USER KNOWLEDGE & UNDERSTANDING



EXPLORE DEMAND SCENARIOS & GENERATE LOAD PROFILES

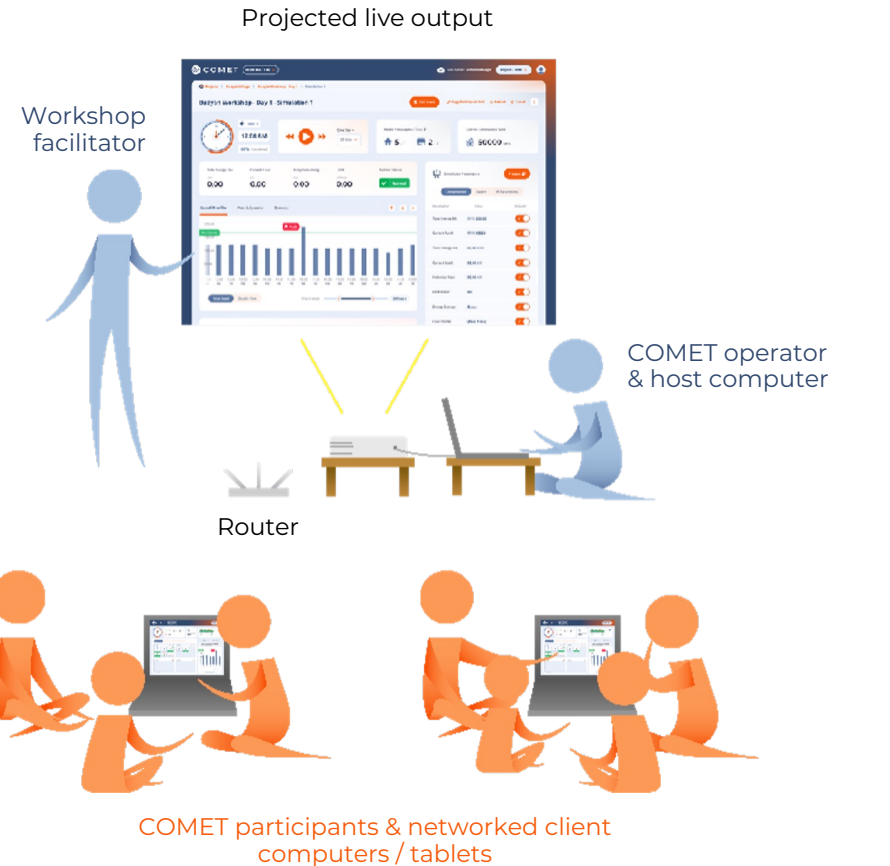
EDUCATIONAL TOOL

- ✓ Simulate a virtual mini-grid with community members providing **real-time end-user demand**.
- ✓ Facilitate discussions and learning, **building trust with the community**.

DEMAND EXPLORATION TOOL

- ✓ Explore different **mini-grid scenarios** using **workshop modules**, and build **community acceptance and consensus**.
- ✓ Generate **load profiles, reports and data analysis** on end-user demand and payments.

>10,000 people, 14 communities impacted by COMET across 5 countries



WORKSHOP MODULES:

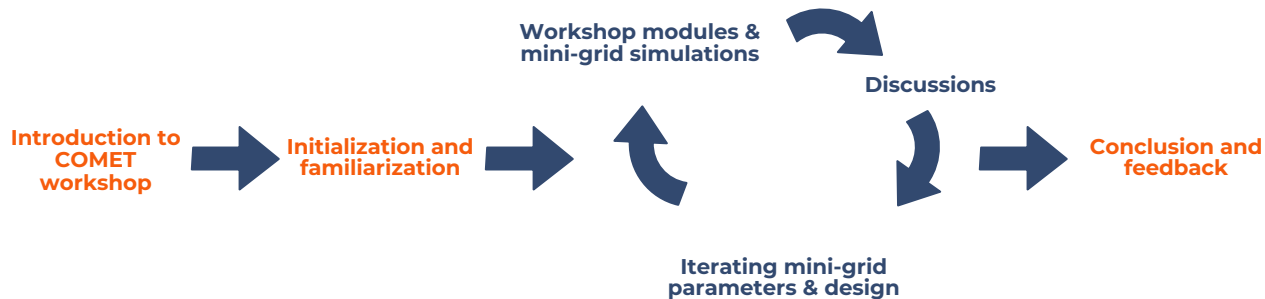
- Demand exploration management
- Demand stimulation
- Demand-side
- Productive end use
- All-female workshops

THE COMET PROCESS

PRE-WORKSHOP SOCIAL BASELINE ACTIVITIES ARE CONDUCTED TO BETTER UNDERSTAND COMMUNITY NEEDS AND PRIORITIES AND CALIBRATE COMET PARAMETERS.

COMET WORKSHOPS ARE HELD, WITH MULTIPLE MODULES AND SESSIONS FOCUSED ON COMMUNITY-SPECIFIC TOPICS AND ISSUES.

IMPLEMENTATION OF OUTCOMES THROUGH AN ACTION PLAN DESIGNED WITH MINI-GRID VILLAGE COMMITTEE OR MANAGEMENT.



WORKSHOP FLOW

WHEN IS COMET USED?



**Project planning
& development**



**Installation &
training**



**Operation &
maintenance**

COMET WORKSHOPS

**Mini-grid familiarization &
demand exploration**

**Demand side management
(DSM) & productive use of
energy (PUE) planning**

**Demand stimulation & system
revisions**

BENEFITS

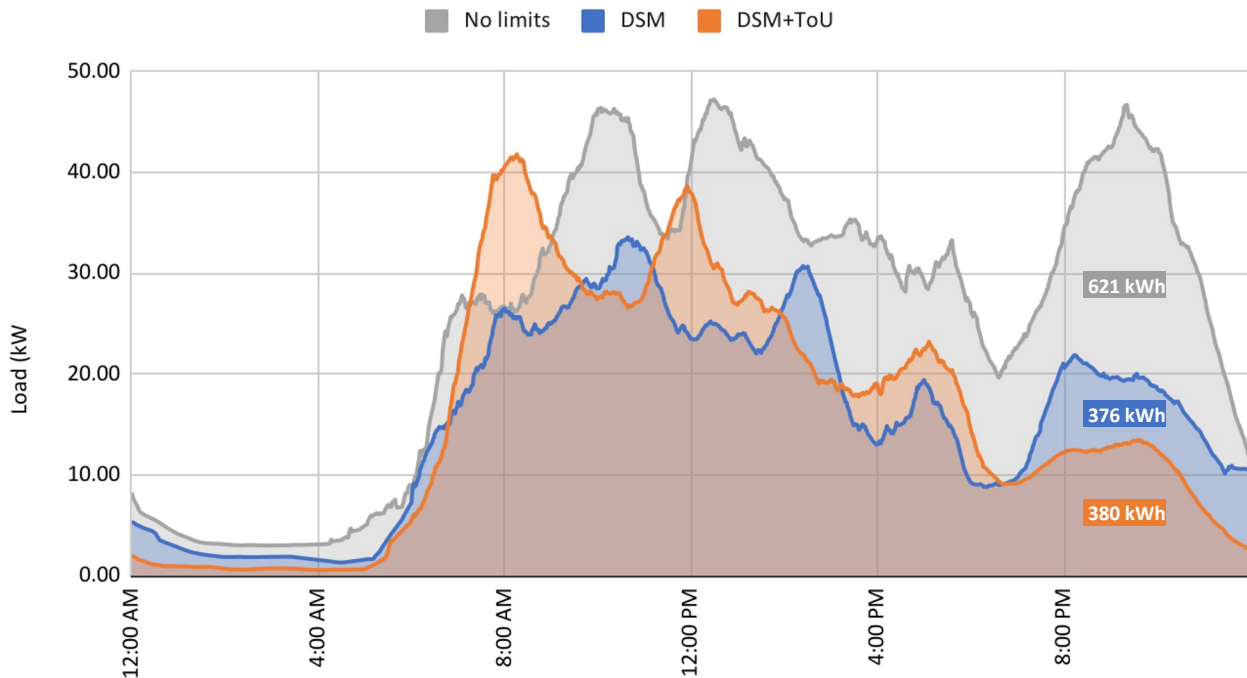
- Improved demand & willingness-to-pay forecasts
- Realistic expectations of service costs and benefits
- Increased trust between developer and community

- Peer-to-peer support for customer recruitment
- Socialized DSM strategies
- Appropriate PUE investments
- Recruitment and training for local operators & managers

- DSM revisions to manage peak loads or stimulate demand
- Increased system utilization & higher revenue
- New PUE investment
- Reduced end user conflict

COMET IN SOMALILAND (2021)

BD - Total Community Load



DEMOGRAPHICS:

- ✓ Pop.: 2,800 (360 HH, 102 bus., 14 public services)
- ✓ Border town economy: livestock & trading
- ✓ Average monthly income: \$100, WTP - \$10

KEY OUTCOMES:

- ✓ Demand depends on pricing and DSM
- ✓ Improved system utilization with ToU rates and load limits
- ✓ Community expectations aligned with pricing and DSM plan.

Find out more:
cometapp.net

Contact us:
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Discussion



Pose your questions in the chat!



Wrap-up & Conclusion