ENERGY EFFICIENT LIGHTING AND APPLIANCES
in East and Southern Africa

EELA Annual Stakeholder Regional Forum

25 June 2021

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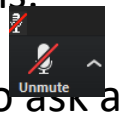
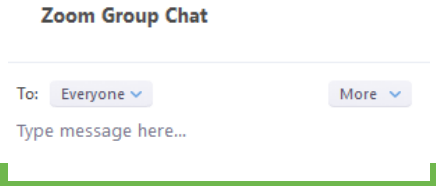
Ground Rules

- Kindly ***mute*** your microphone during the presentations.



- Use the ***"Raise Hand"*** button in case you would like to ask a question or to add something in the conversation.

- ***Type*** your comments and questions (English or French) in the *group chat* on the right of your screen.



Virtual and interactive!

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Energy Efficient lighting and appliances market in East and Southern Africa

Fungai Alphonce Matura – Private Sector Specialist - EELA Project

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East and Southern Africa AT A GLANCE

21 Countries

450 Million Inhabitants

Economies
CONTINUE TO GROW

US$ **803.4** billion
Cumulative GDP in 2017

Very low
ELECTRIFCIATION RATES
Averaging **60%**
As well as energy insecurity due to low generation capacity

Poverty remains
PERSISTENT
As impacts of climate change intensify

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EELA OBJECTIVES & APPROACH

EELA seeks to develop vibrant markets for energy efficient lighting and appliances across 21 countries in East and Southern Africa.

The EELA approach to change

Market incentives for the private sector to deliver efficient and high-quality energy services

Minimum Energy Performance Standards (MEPS) for appliances which are harmonized in the region

Capacity building on policy and regulatory framework development, appliances testing and regulatory enforcement

Awareness raising on the benefits of adopting efficient technologies across all stakeholders

Implemented by UNIDO in collaboration with regional regional sustainable energy centres

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EELA Interventions

- Development on MEPS for various appliances (GSL, cooling appliances, etc.)
- Development of a monitoring, verification and evaluation (MV&E) framework
- Development of a private sector intervention strategy
- Capacity building , awareness raising and private sector support actions
- Supporting development of national EE programmes
- Stakeholder engagement to raise awareness on the project and identify focal points
- Environmental management actions
- Development of regional EAC energy efficiency policy

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Barriers Hindering Market Transformation

- Import oriented markets with no common policy framework for energy efficient lighting and appliances – absence of MEPS in most countries
- Significant barriers still exist around awareness, access to finance and skills
- Ad hoc versus systematic approach – need for transformation
- Lack of capacity to develop and implement regulations such as MEPS
- Challenges with enforcement capacity including local testing facilities
- Challenges on border control and leakage
- Lack of motivation for the private sector to invest as standards are not enforced - Small country focused markets
- Lack of service providers with viable business models that can deliver efficient energy services

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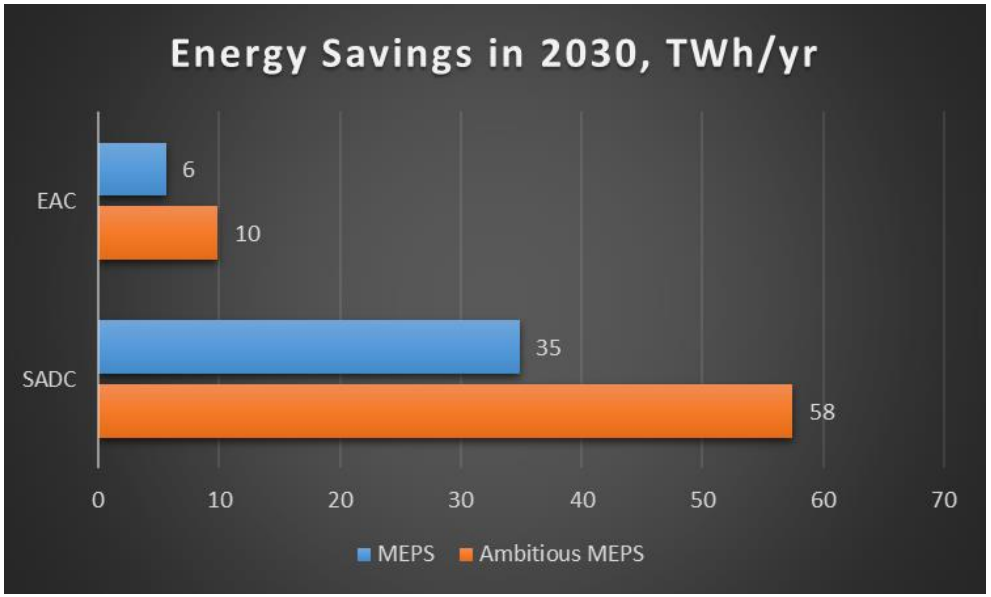
Benefits of Transforming to EE product Markets

- Household savings - reduce household energy bills
- Grid reliability - reduce electricity shortages (brown-outs / black-outs); reduces peak power demand
- Save national investment - reduce capital and loans tied up in power stations and grid upgrades; slow new demand growth
- Market protection - avoid becoming dumping-ground for technologies banned elsewhere
- Energy imports - reduce capital out-flow for fuel purchases / electricity imports; strengthen national energy security
- Climate change mitigation

Savings potential across Eastern and Southern Africa



Refrigerators

Air Conditioning

Motors

Lighting

Transformers

- **Savings of 41 – 68 TWh/yr in 2030 across EAC and SADC***
- **Equal to 5 - 8 times Kenya's total electricity consumption (IEA, 2016)**
- **Avoids 18 - 30 coal-fired powerplants**, costing US$22-37 billion to build**

**EA: Burundi, Kenya, Rwanda, South Sudan, Tanzania, Uganda. SADC: Angola, Botswana, DRC, eSwatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Zambia, Zimbabwe.*

***Assuming US$2,500/kW and a 500MW power plant operating at 0.50 availability, producing 2.19 TWh/yr.*

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EELA Private Sector Support Facility

Technical Assistance (TA) to potential clients e.g. municipalities, cities or industries to design energy efficiency service business models and to engage an energy service company

Call for Expression of Interest launched

Financial Support is provided to energy service companies to particularly support the upfront costs for the purchase of equipment (co-financing facility)

- Conducted dedicated Country Private Sector Meetings
- BUSINESS MODELS – EPC, LEASING, CaaS, LaaS – Innovation
- EE TECHNOLOGIES – Lighting, Cooling, Productive Use

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Energy Efficiency Policies for Lighting and Appliances

Denis Ariho, Lead Technical Expert for EAC, EELA Project, EACREEE

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Energy efficiency policies for lighting and appliances

- Lighting, appliances and equipment account for more than 50% of the total global electricity demand and expected to double by 2050 in developing countries (C2E2 2021).
- Implementation of suitable energy efficiency policies can contribute to 40% reductions in emissions.
- Well designed, mandatory energy efficiency standards eliminate inefficient products from the market.
- Energy labels empower consumers to make informed choices on products to purchase.
- Energy efficiency standards and labels should be given priority in the country's energy efficiency policies and programmes.

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Energy efficiency policy landscape in SADC

Country	Energy Policy	EE Policy Framework		
		Policy	Strategy	Action Plan
Angola	Y			
Botswana	D	Y	Y	Y
Comoros	Y	D		
DRC	Y			
Eswatini	Y	Y	Y	Y
Lesotho	Y	Y	D	D
Madagascar	Y			Y
Malawi	Y		Y	
Mauritius	R	Y	Y	Y
Mozambique	Y		D	D
Namibia	Y	D	D	
Seychelles	Y	D	D	D
South Africa	Y	Y	Y	Y
Tanzania	Y	Y	Y	D
Zambia	Y		D	D
Zimbabwe	Y	D	D	D

D – Under Development, R – Under Revision, Y - Available (1)

(1) REEESAP for EA-SA-IO under COMESA/ESREM Project

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Energy efficiency policy landscape in EAC

Country	Energy Policy	EE Policy Framework		
		Policy	Strategy	Action plan
Uganda	R	D	Y	Y
Kenya	Y	Y	Y	Y
Tanzania	Y	Y	Y	D
South Sudan				
Rwanda	Y		Y	Y
Burundi	Y			

D – Under Development, R – Under Revision, Y - Available

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Key policy interventions

- Development of energy efficiency policies and regulations
- Development and enforcement of MEPS and labels
- Training and capacity building
- Awareness on energy efficiency
- Public procurement guidelines on energy efficiency
- Coordination among the key sector players: ministries, regulators, standards bodies, customs bodies, etc.

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Panel discussion

- Mr. James Wakaba, Director of the East Africa Programme CLASP
- Mr. Usamah Kaggwa, Senior Energy Officer Ministry of Energy and Mineral Development, Uganda
- Mr. Mafayo Ziba, Assistant Director – Technical, Department of Energy in Ministry of Energy Zambia
- Ms. Cynthia Alexander, Principal Officer Ministry of Environment, Energy and Climate Change, Seychelles

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Energy Efficiency for Productive Use Appliances and Equipment

Evita Moawad, Project Administrator – UNIDO, EELA Project

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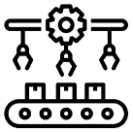
What is productive use of energy?

Definition

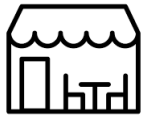
- Broad - Utilization of electric and non-electric (heat or mechanical) energy for activities that enhance **income and welfare, including education and health** (1).
- Narrow - Activities that involve the application of energy to create goods and/or services either directly or indirectly for the **production of income or value** (2).

Sectors and Value Chains

- Coffee / Dairy
- Irrigation / Cold storage / Drying / Secondary processing



- Textile / Construction
- Yarn production / Cut and sew / Raw material processing



- Restaurant / Carpentry / Healthcare
- E-cooking / Cold storage

Electricity access

Stand-alone appliances & equipment — **Mini-grid** — **On-grid**

(1) KAPADIA, K. (2004): Productive Uses of Renewable Energy: A Review of Four Bank-GEF Projects. January 2004 draft version. Washington, D.C.
(2) WHITE, R. (2003): GEF-FAO Workshop on Productive Uses of Renewable Energy – Synthesis and Report. Washington, D.C.

Energy efficiency in productive use appliances and equipment

Opportunities

Energy efficiency in income generating activities = ↑ productivity and ↑ competitiveness

Energy efficiency contributes to decoupling economic growth and environmental impact by reducing energy intensity (1).

Challenges

Stand-alone appliances & equipment — **Mini-grid** — **On-grid**

- Locally available machinery is inefficient and of poor quality
- Most SHS companies do not currently provide productive use products
- No energy efficiency policy for productive use appliances and equipment (2)

- SMEs rely on outdated technology
- Lack of information on energy saving equipment (and practices)
- Low access to finance for upfront investments (3)

(1) https://www.unido.org/our-focus/safeguarding-environment/clean-energy-access-productive-use/industrial-energy-efficiency-and-climate-change
(2) https://shellfoundation.org/app/uploads/2018/10/SF-OCA-Uganda-Accelerator-_-Productive-Use-Technology.pdf
(3) Kostka, Genia, Moslener, Ulf, and Andreas, Jan (2013): Barriers to increasing energy efficiency: Evidence from small-and medium-sized enterprises in China, Journal of Cleaner Production, Volume 57, 59-68.

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Panel discussion

- Makena Ireri, Manager, CLASP and Efficiency for Access
- Jacob Etunganan, Senior Advisor, Energy and Agriculture, CRAFT, SNV
- Olga Namatovu, Technical Advisor Energy Programme, GIZ
- Sabera Khan, Director, Lloyds Financials Limited in Zambia

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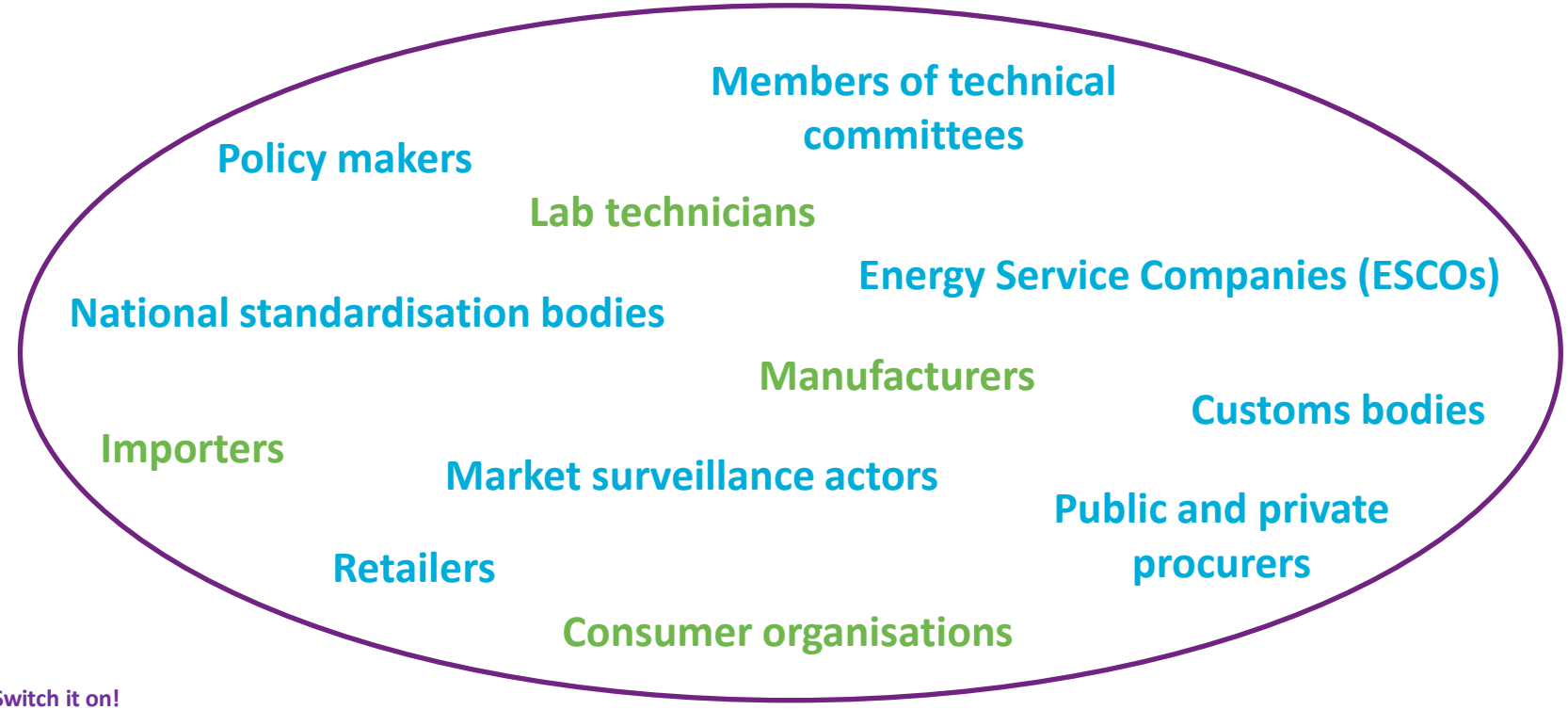
EELA Online Training

Asteria Markus, Project Assistant, EELA Project
Borbala Csete, Project Assistant, EELA Project

Objective and target audience of the training

Strengthening the knowledge of key stakeholders on how to develop an enabling market for Energy Efficient Lighting and Appliances in East and Southern Africa.



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Overview of EELA online training

Module 1
General Introduction

Block 1: Introduction to energy efficient appliances

Block 2: Policy and Regulations

Block 3: Market Surveillance

Block 4: Market Systems Development Introduction

Block 5:Webinars and Assignments for Core Group

Module 2
Lighting

Module 4
Productive Use

Module 3
Clean Cooling

Module 5
Market Development

Mandatory → ← *Based on specialisation/interest*

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Module 1 & 2

- Module 1 Introduction
- Block 1 - Introduction to EE Appliances
- Block 2 - Policy and Regulations
- Block 3 - Market Surveillance
- Block 4 - Market Systems Development Introduction

- Module 2 Ligting
- Block 0 - Introduction to Module 2
- Block 1 - Light and Health
- Block 2 -Technology, LED Lighting Systems
- Block 3 - Control systems
- Block 4 - Photometry
- Block 5 - Product Life Length
- Block 6 - Load Shedding
- Block 7 - Equipment Training
- Block 8 - Lab Building
- Block 9 - Lab Related Activites
- Block 10 - Equipment Procurement

STAY TUNED!!

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EELA Technical Assistance and Co-Financing Facility

Fungai Alphonce Matura – Private Sector Specialist - EELA Project

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EELA objectives

The Energy Efficient Lighting and Appliances (EELA) project seeks to stimulate vibrant markets for energy efficient appliances and equipment in EAC and SADC Member States.

Focus on private sector led energy service business models

- **Leasing Models**
- **Energy Procurement Contracting**
- **Lighting/Cooling/Heating as a Service**

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Why anchoring on private sector

- Opportunity to leverage private sector technical skills and finance
- Free up resources of central/local governments and state utilities for other priority areas
- Take advantage of advances in business models
- More sustainable in the medium to long term than government or donor funded handouts of EE appliances
- Help overcome challenges related to accessing EE appliances including
  - High upfront cost of appliances
  - Lack of affordable funding for EE projects
  - Limited technical skills for designing, implementing, operating and maintaining EE appliance projects

Private sector led initiatives key to ensuring sustainable access to energy efficient appliances and services

Rationale for promoting energy service business models

- Different models promoted by ESCOs offering EPC, Lighting as a Service, EE equipment leasing, Cooling as a Service services in place
- Through these models, energy service providers can design and implement energy efficiency appliance projects and mobilize financing
- Help address barriers to accessing energy efficient appliances and services including

High upfront costs of EE appliances	Lack of project design and implementation skills/expertise
Limited access to affordable funding for upgrading appliances	Split incentives
High risk perception among end users and lenders	Lack of operating and maintenance skills

- Models highly flexible and can be adapted to fit client needs

EELA technical assistance and co-financing facility

EELA Technical Assistance and Co-financing Facility will assist both the energy service providers and their potential clients.

The scheme has three windows:

- **First Window: Technical Assistance for the design of Energy Service business Models**
  - The Facility will identify, and support municipalities, industries and other large energy users that would be interested in collaborating with energy service providers in addressing energy efficiency barriers through appropriate energy service business models.
  - The EELA project will support the design of the right energy efficiency service business models and in engaging relevant energy service providers.

A standing Call for EoI has been published on the UNIDO, EACREEE and SACREEE websites and applications will be screened and processed on an on-going basis

EELA technical assistance and co-financing facility (Cont…)

- **Second Window: Co-financing Window**
  - The Window will partially cover the upfront costs of EE equipment
  - Energy services providers who would have entered an energy service provision arrangement with a client are eligible to apply for support from this financial support window.
  - The financial support will target reducing the upfront cost of investing in energy efficient equipment. The EELA project will provide partial grant funding to successful applicants who would be required to provide co-financing.
  - The initially targeted projects include those focusing on lighting, cooling, and appliances for the productive sector.
- **Third Window: Technology transition support for manufacturers**
  - This will target manufacturers of energy efficient appliances in a SADC or EAC member state requiring upgrading of their production to meet the newly adopted regional MEPS for lighting and cooling appliances are eligible to apply for this technical assistance support.

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Summary table

	Window 1	Window 2	Window 3
Applicants	Energy users	Energy service providers	Manufacturers
Support offered	Technical assistance to design an Energy Efficiency project applying an energy service business model	Non- repayable grant to cover upfront costs for equipment **Max. 200,000 EUR**	Non- repayable grant to support technology upgrade **Max. 100,000 EUR**
Required own contribution	Demonstrated commitment to implement the project	Signed contract with a client. At least 25% demonstrated co-financing	Demonstrated need for upgrade of manufacturing At least 25% demonstrated co-financing

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Target business models

- Energy providers assisted to deploy business models that will enable increased access to energy efficient lighting, appliances and services including the following models:
  - Energy efficient appliance/equipment leasing
  - Energy Performance Contracts/Energy Service Contracts
  - Lighting as a Service
  - Cooling as a Service
  - Tailor made energy efficient lighting and appliance business models
- Energy service providers capacitated to develop track record, visibility and credibility
- Energy users assisted to overcome barriers towards accessing energy efficient lighting, appliances and services through TA support
- Opportunity to partner with experienced, local, regional and international energy service providers
- At least five projects to be supported in the first year of the project

Available funding and required co-financing

- The maximum amount available under the of Co-financing and the Technology Transition support Windows is 200.000 euros and 100.000 euros per project respectively.
- The provided EELA funding shall not exceed 75% of the total project costs
- The level of the applicants' own contribution is a factor that will be used in evaluating projects
- In kind contribution cannot be used in determining project promoters' contribution
- Applicants cannot access funding from the same Window more than once
- The following activities and products can be funded under the project: -
  - Procurement of energy efficient lighting and appliances to be used in implementing energy efficiency projects
  - Procurement of other hardware and software relevant for the implementation of the project
- EELA funding cannot be applied towards working capital finance
- Under the Co-financing and Technology Transition Window EELA funding cannot be applied towards project preparation costs

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THANK YOU

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