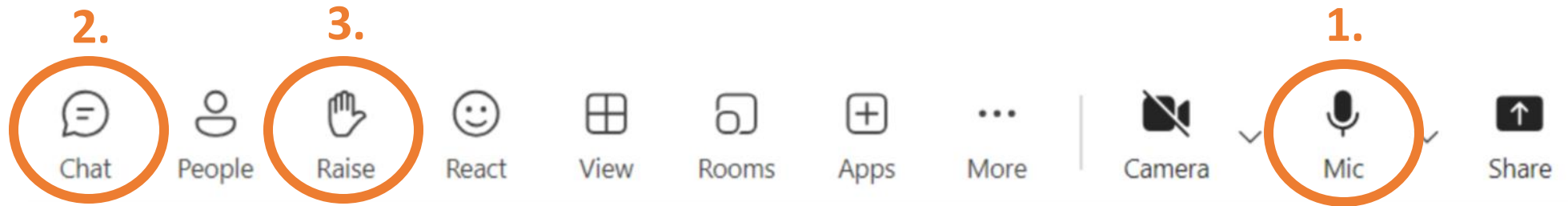




# U4E Webinar on Electric Motor Systems - pumps, fans, compressors, motors, VSDs –

23rd October 2024

# Housekeeping



1. Each participant can enable audio and video. Kindly mute yourself and turn off your video when you enter the webinar.
2. Please post questions in the chat during the presentations.
3. Please raise your hand and unmute yourself during the Q&A session.
4. The session is being recorded and will be posted later on our website, along with the slides.

**Thank you for joining! Let's get started. 😊**



## Overview of UNEP U4E

**Madeleine Edl, Senior Energy Efficiency Expert**

**23 October 2024**

# U4E Partner Organizations

## Manufacturers & Industry Associations



## Technical Organizations & Centres



## Funders and Financiers



## International Organizations & Initiatives



# Overview of U4E Tools and Guidance

Resources: [U4E website](#)

**U4E** COUNTRY SAVINGS ASSESSMENT

**China**

**LIGHTING**  
All Lighting

**COOLING**  
Residential Refrigerators, Commercial Refrigeration, Room Air Conditioners

**EQUIPMENT**  
Industrial Electric Motors, Distribution Transformers

**INTRODUCTION**  
The Country Savings assessments provide a summary of the benefits attained from improved energy efficiency and climate friendly lighting, cooling appliances, and equipment. A market transformation can be obtained through measures such as Minimum Energy Performance Standards (MEPS), product labelling, market monitoring and verification; and financial incentives. For each product, the analysis considers three different scenarios:

- Business As Usual:** Assumes that no actions are introduced and that the efficiency of products in the market continues to develop in line with historical trends in the absence of regulation.
- Minimum Ambition:** In which MEPS are introduced in line with the basic requirements of the United Nations Environment Programme (UNEP) United for Efficiency (U4E) Model Regulation Guidelines.
- High Ambition:** In which more ambitious actions are implemented in line with the highest levels proposed in the Model Regulation Guidelines.

More detailed breakdowns for lighting, cooling appliances and equipment can be found on the UNEP U4E website.

**REPORT CONTENTS**

Page 1	Introduction
Page 2	Overview of benefits
Page 3	Higher ambition to help reach energy and climate goals
Page 4	Detailed benefits and typical product assumptions
Page 5	Savings potential in context
Page 6	Country data, product assumptions and methodology

Clean Cooling COLLABORATIVE, Department for Environment Food & Rural Affairs, UN environment programme

U4E Country Savings Assessment, China, July 2022

**UN environment**

Updated motors policy guide is available shortly!

Accelerating the Global Adoption of ENERGY-EFFICIENT ELECTRIC MOTORS AND MOTOR SYSTEMS

UN Environment - Global Environment Facility | United for Efficiency (U4E)

gef U4E

U4E POLICY GUIDE SERIES

**UN environment**

PERFORMANCE TESTING OF LIGHTING PRODUCTS

UN Environment - Global Environment Facility | United for Efficiency (U4E)

**UN environment**

SUPPLEMENT TO THE ELECTRIC MOTORS AND MOTOR SYSTEMS POLICY GUIDE: "ACCELERATING THE GLOBAL ADOPTION OF ENERGY-EFFICIENT ELECTRIC MOTORS"

MODEL REGULATION GUIDELINES

ENERGY EFFICIENCY REQUIREMENTS FOR GENERAL PURPOSE ELECTRIC MOTORS

UN Environment - Global Environment Facility | United for Efficiency (U4E)

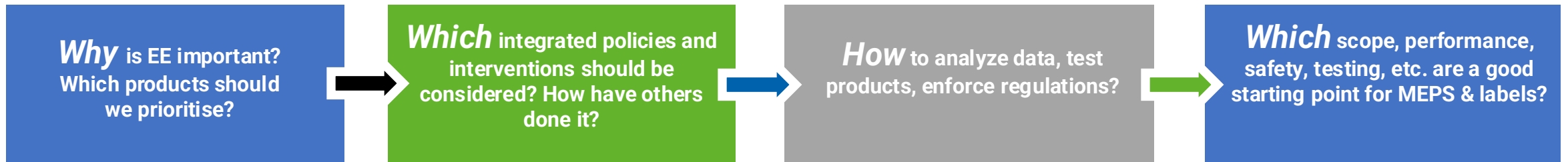
gef U4E

## Country Savings Assessments

## Policy Guides

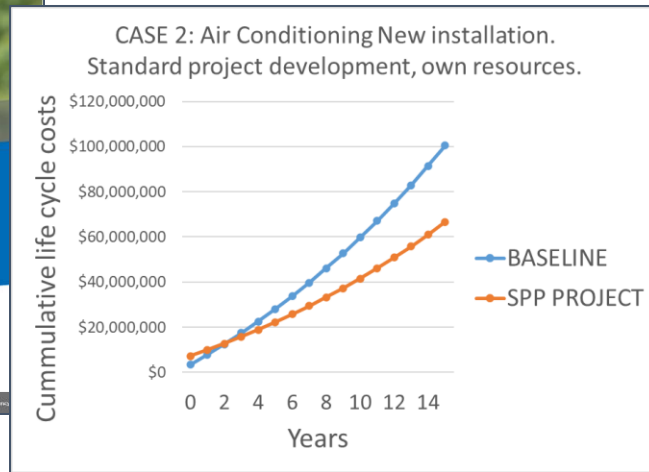
## Technical Guidance

## Model Regulations

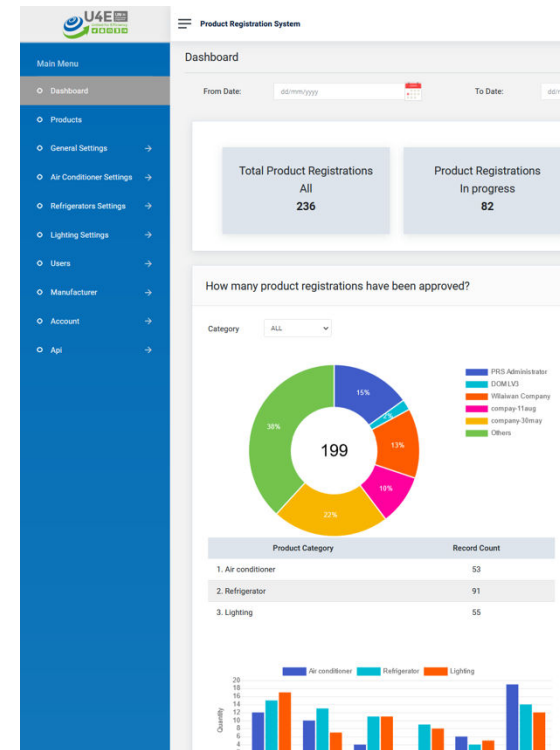


# Overview of U4E Tools and Guidance

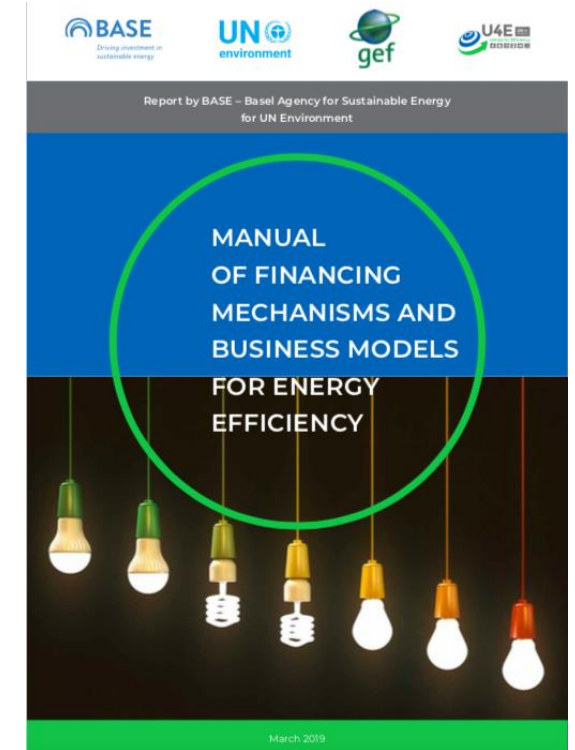
Resources: [U4E website](#)



Sustainable Public Procurement



Product Registration System



Financial Mechanisms

**Which** products are claimed to meet the Model Regulation Guidelines and where are they available?  
**How** to assess their benefits for end users?



**How** to monitor the market, enhance enforcement, and share information?



**How** to address higher first costs, risk, access to capital, & other barriers?

# U4E Country Savings Assessment - 2022 Update



- 156 developing countries and emerging economies have been assessed under the U4E Country Saving Assessments
- Explore for each country on: <https://united4efficiency.org/countries/country-assessments/>
- U4E Country Savings Assessments Factsheet is available [here](#)

# Country Savings Assessments

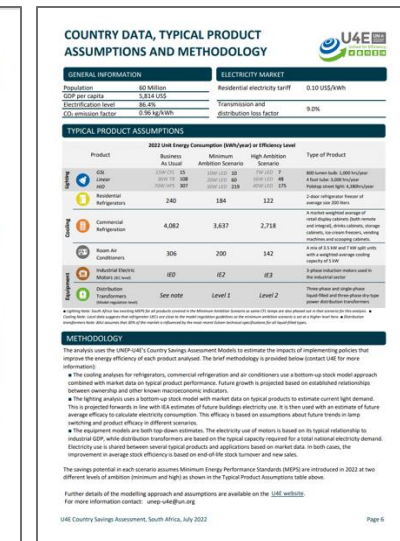
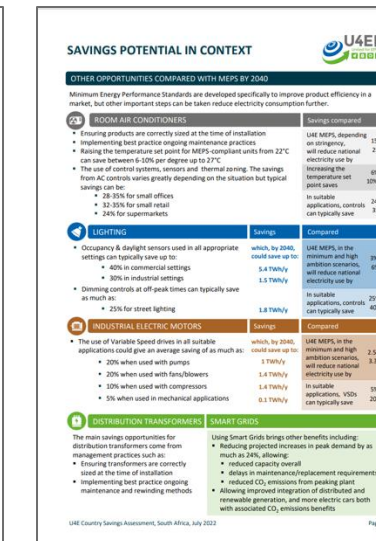
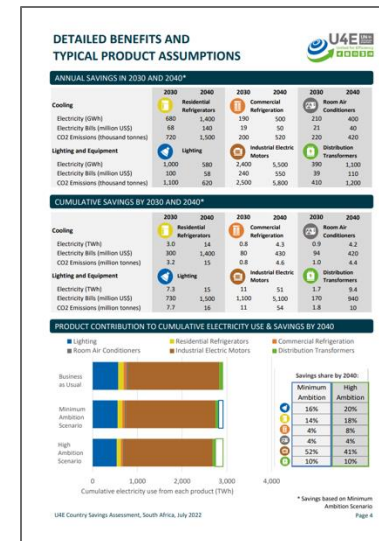
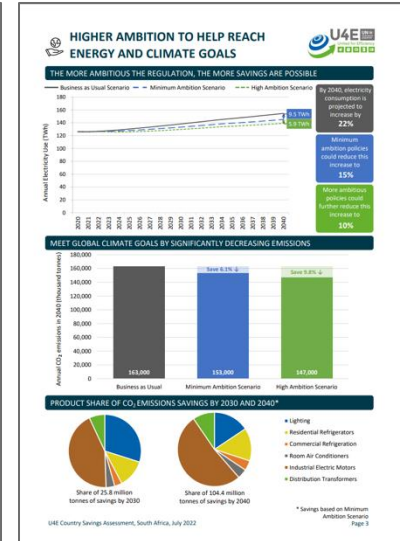
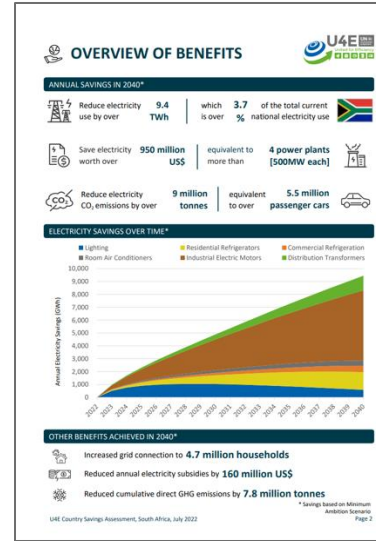
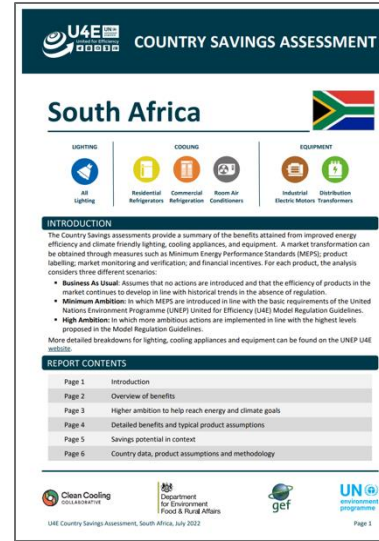
## Objective

Analysis of the **potential impact** of adopting Model Regulation guidelines for **lighting, room air conditioners, residential refrigerators, commercial refrigeration equipment, industrial electric motors, and distribution transformers.**

These product categories are responsible for **>50% of electricity usage today.**

## Overview

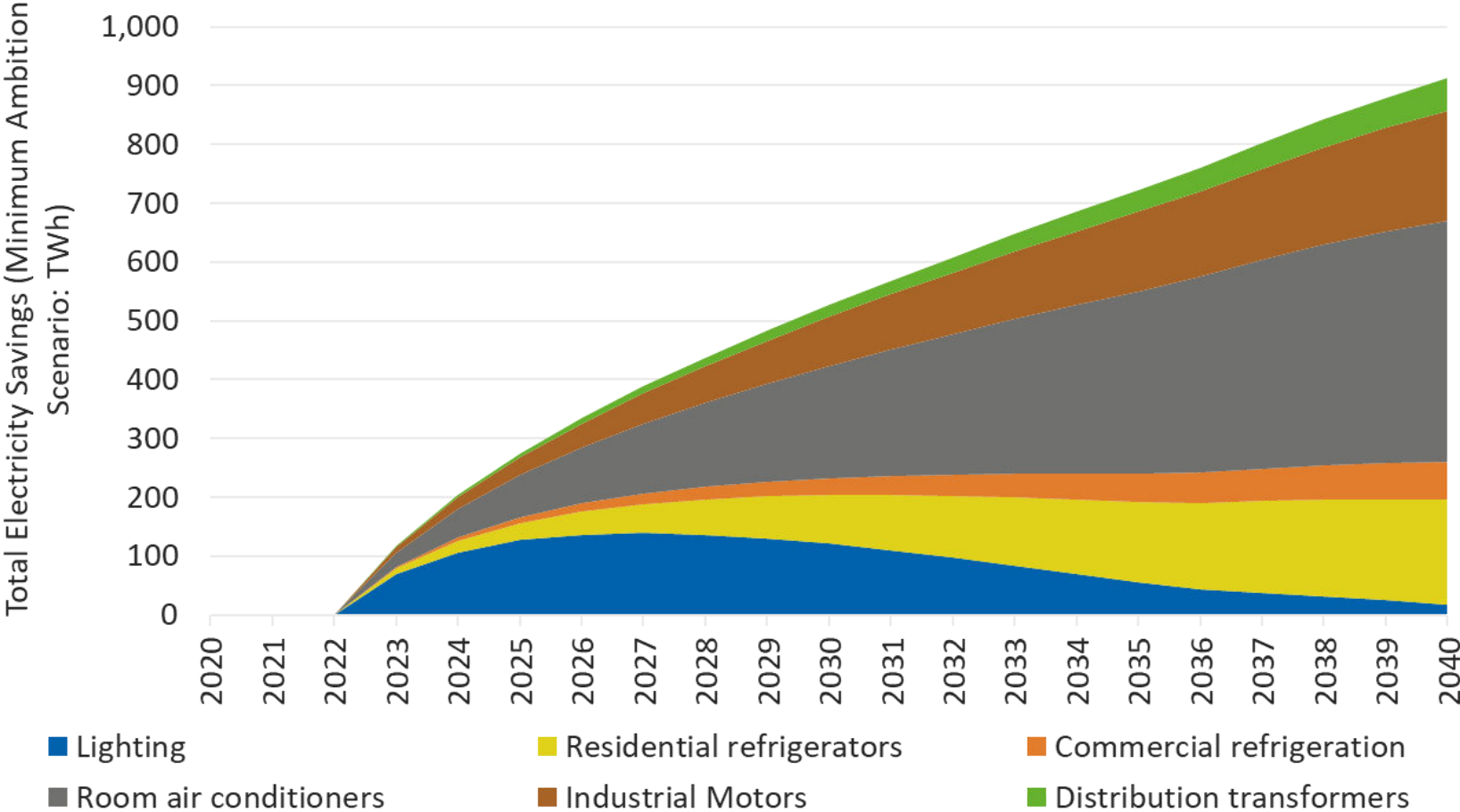
- The assessment provides three scenarios: **Business As Usual Scenario (BAU)**– No policy intervention; **Minimum Ambition Scenario** – assumes Minimum Energy Performance Standards (MEPS) implemented; **High Ambition Scenario** – Assumes MEPS are implemented at a higher level of ambition for six products.
- The **energy savings potential** is calculated till 2040 and is computed based on the difference between total energy consumption in the ambition scenarios and that of the BAU scenario and is expressed in terms of **GHG emissions mitigated, Capacity (Power plants) avoidance and Financial savings.**



\* Available in English for all 156 developing and emerging economies. French and Spanish translations are available for select countries



# Saving Opportunities in Emerging Economies and Developing Countries for Industrial Motors



Annual savings for industrial electric motors

**187\***  
TWh

**185**  
Million tonnes

**\$26**  
Billion USD

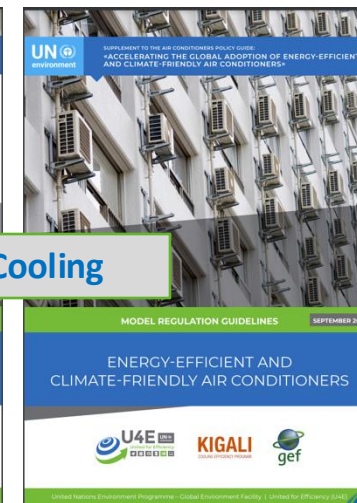
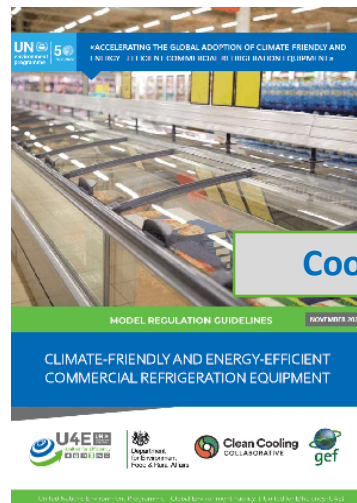
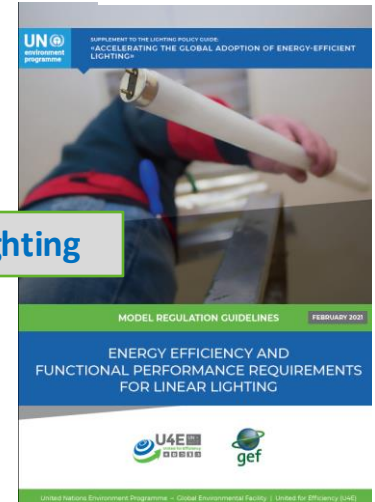
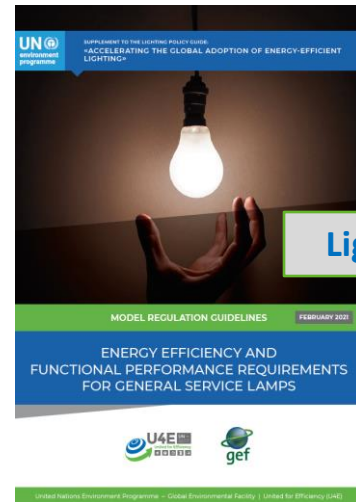
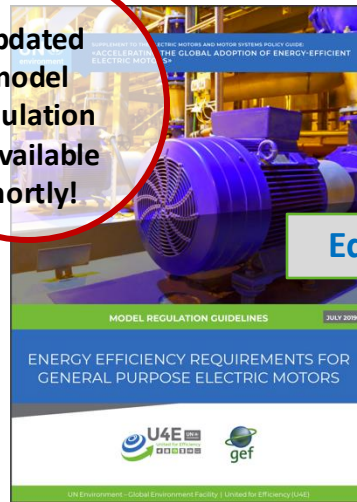
Minimum Ambition Scenario

# Model Regulation Guidelines



- Guidance to help **inform regulatory authorities and policy makers**
- Sets a **minimum efficiency floor** to prohibit future sales of inefficient products from the market and sets higher **tiers** consistent with technology and market opportunities.
- Over **60+ technical experts** (per product group) from around the world contributed data, analysis, reviews
- Simplify **adoption and implementation** of a robust regulation
- References **global technology and policy trends**

Updated model regulation is available shortly!



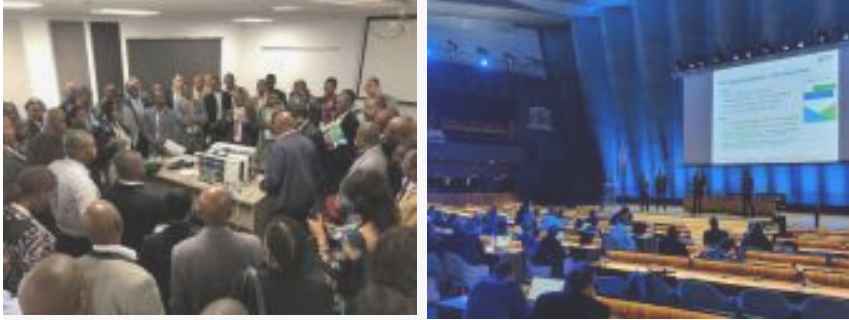
**Donors:**   

Available in English (all); Arabic, Spanish, Chinese, French, Portuguese for select products

Available at: <https://united4efficiency.org/resources/model-regulation-guidelines/> or scan the QR above



# Recent Examples of Opportunities to Apply the Guidelines



## Global

- **Global Cooling Pledge** - COP28 Presidency supported by Cool Coalition
- **Kigali Implementation Plans** to increase equipment efficiency
- Reference for efficiency **benchmark in partner guidance**: CLASP Best World MEPS, IEA 4E programme, IDBs programme eligibility, GIZ NDC4 proposal eligibility criteria
- Cool Coalition **National Cooling Action Plan** methodology
- **Climate Commitments** NDC on updating existing MEPS and labels
- **Capacity Building**: Green Cooling Summit, Twinning Workshops

## National Projects

- MEPS & Labels: Rwanda (adopted), Pakistan, Brazil and Chile (commercial refrigerators under discussion)
- GCF Readiness (The Gambia), Update existing MEPS & Labels in Cuba, El Salvador, and Honduras
- Recommended in NCAPs (incl. Nigeria, Barbados, Dom Republic, Kenya)
- Financial Mechanisms: Ghana, Senegal, Rwanda, Costa Rica; SPP schemes in pilot countries in 2021 Sustainable Public Procurement: Toolkit and pilots in Morocco, Ghana and possibly Egypt

## Regional Harmonisation

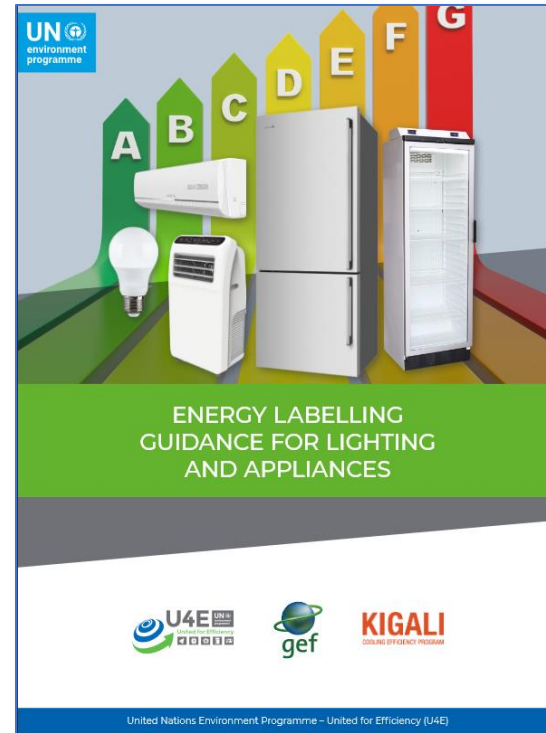
- MEPS & Labels: ASEAN; East Africa; Southern Africa



# U4E Complementary tools to the Model Regulation Guidelines



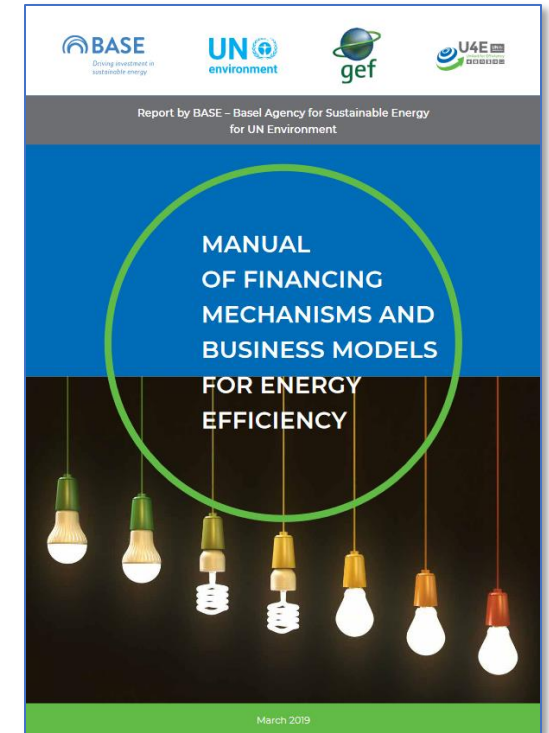
Market and Impact Assessments



Labels Guidance



Compliance Mechanisms



Incentive Programmes

**Examples of U4E  
project  
implementation**





# National and Regional Project Examples

## Energy Efficiency Commercial Refrigerators in Brazil



### Main components

1. **Market Assessment** on commercial refrigerators.
2. Recommendations on international best practices to **implement Minimum Energy Performance Standards and Labelling regulation** for commercial refrigerators (Refrigerated display cabinets, Ice-cream freezers, Beverage coolers).
3. Develop monitoring, verification and compliance (MVE) capabilities for commercial refrigerators, including an overseas Study Tour on Testing Standards for National laboratories and local manufactures.
4. Technical assistance for the **development of Product Registry System** for Commercial Refrigerators.
5. Recommendations/guidelines on **Sustainable Public Procurement**.
6. **Regional workshop** to share recommendations and lessons learned with other MERCOSUR countries.



Q3 2021  
–  
Q4 2022

**UNITED FOR EFFICIENCY NO BRASIL**

**RESUMO DO PROJETO**  
Mercado Nacional para Aceleração da Eficiência Energética e Redução de Emissões nos Refrigeradores Comerciais no Brasil

**REGIÃO DO PROJETO**  
América Latina e Caribe

**STATUS ATIVO**

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Alexandra Marcol (Analista de Infraestrutura - Coordenação GGF de Eficiência Energética) alexandra.marcol@united4efficiency.org

**PARCEIROS**  
Ministério da Economia, Ministério do Meio Ambiente, Instituto Nacional de Metrologia, Qualidade e Tecnologia (INMETRO), Empresa de Pesquisa Energética (EPE), Centro de Pesquisa e Energia Elétrica (CETEL), Eletrolux, Associação Brasileira da Indústria Elétrica e Eletrônica (ABINEE), Maratão, Nabeo, Global Appliances, LABEL PIGRES, Tecumseh

**OBJETIVOS PRINCIPAIS DO PROJETO**  
Com base nas análises de país de U4E, a potencial de redução no consumo de eletricidade, economia financeira e mitigação de emissões de CO2 no Brasil devida à uma transição para refrigeradores comerciais com eficiência energética superior de 20% a todos os tipos de U4E, o país se encontra em uma posição estratégica para implementar essas melhorias.

**FINANÇAMENTO**  
Mais de 9 TWh em economia de energia anual (equivalente a mais de 105 T. 2 bilhões em custos anuais de eletricidade)

**PARCEIROS**  
Economia e Energia de 1,2 bilhões em custos anuais de eletricidade

**IMPACTOS**  
5 milhões de toneladas de CO2 evitadas anualmente (equivalente a 1 milhão de carros)

**UN 50**  
PROGRAMA DAS NAÇÕES UNIDAS PARA O MEIO AMBIENTE

Donor:



Partners:

MINISTÉRIO DE MINAS E ENERGIA





# National and Regional Project Examples

## Regional Harmonization and National Implementation in SADC and EAC



### Main components

- Development of **regionally harmonized Minimum Energy Performance Standards and Labelling** for the East African Community (EAC) and Southern African Development Community (SADC) → Total of 21 countries (16 SADC & 6 EAC).
- Facilitate **stakeholder engagements** including technical committee meetings and public enquiry.
- **National adoption** (on a voluntary basis) of the MEPS by 4 country members (Eswatini, Mozambique, Zambia, and Zimbabwe)
- **Public awareness activities** including preparation of public sensitisation materials.
- **Capacity building** for customs agencies, standards organizations, and other important stakeholders



Q1 2022 – Q4 2024



Donor:



Clean Cooling  
COLLABORATIVE



Department  
for Environment  
Food & Rural Affairs

Partners:



SACREEE  
SADC CENTRE FOR RENEWABLE  
ENERGY & ENERGY EFFICIENCY





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TRANSFORMING MARKETS TO ENERGY-EFFICIENT PRODUCTS



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