COP26 Product Efficiency Call to Action

Doubling the energy efficiency of key products globally by 2030

26 NOVEMBER 2020

International Energy Agency

HM Government

U4E United for Efficiency

UN CLIMATE CHANGE CONFERENCE UK 2021

IN PARTNERSHIP WITH ITALY

Super-efficient Equipment and Appliances Deployment Initiative (SEAD)

What is the Super-efficient Equipment and Appliances Deployment initiative?

- Founded in 2009 under the Clean Energy Ministerial and IPEEC
- Since 2016, the UK, European Commission and India have taken over as co-leads
- IEA has taken over operating duties in summer 2019

SEAD supports appliance energy efficiency policies and programmes for the 18 member countries. Through its activities, SEAD aims to:

Increase partner participation and engagement

Highlight the benefits and urgency of product efficiency

Increase awareness among manufacturers

Ahead of COP, we want to focus our action on four key product categories:
1) electric motors, 2) air conditioners, 3) refrigerators and 4) lighting.

We will track and monitor progress on these products through SEAD.

SEAD Members and Partners

4E Efficient Electrical End-Use Equipment International Energy Agency

clasp

iea

U4E United for Efficiency

BERKELEY LAB
Lawrence Berkeley National Laboratory

CLEAN ENERGY MINISTERIAL
Advancing Clean Energy Together

SEAD SUPER-EFFICIENT EQUIPMENT & APPLIANCE DEPLOYMENT
AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

COP26 Product Efficiency Call to Action

COP26 Product Efficiency Call to Action — Objectives

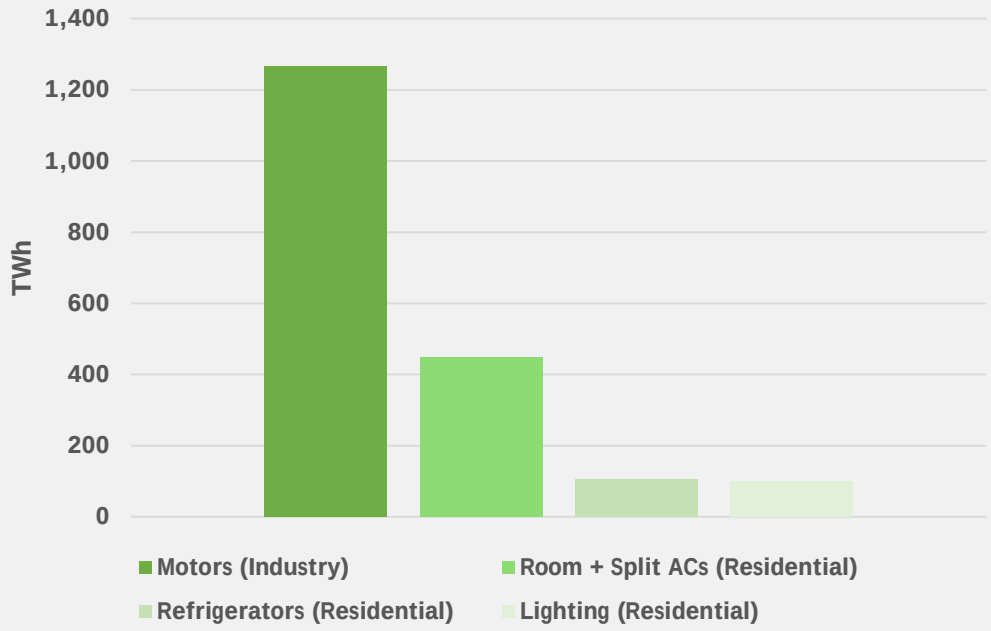
As COP Presidents, the UK wants to drive international action on product energy efficiency policy. Ahead of COP26, the UK and IEA have launched a **call to action** to strengthen the **Super-efficient Equipment and Appliance Deployment (SEAD initiative)** to support countries in achieving raised ambition **more quickly, easily and at a lower cost**. The objectives of the call to action are to:

- **Set countries on a trajectory to double the efficiency of key products sold globally by 2030 –** motors, air conditioners, refrigerators, lighting
- Support the delivery of crucial **national climate change targets**
- Provide consumers and businesses with more efficient products that are **affordable and cost-effective** to own and operate
- Stimulate **innovation** and provide businesses with **export opportunities**
- Promote a dual course of action making products both **energy efficient and climate friendly** by reducing the use of refrigerants in cooling appliances




Huge energy savings potential from product efficiency, especially industrial motors

Electricity consumption savings potential (TWh) in 2030 globally by product



Savings potential is equivalent to:

More than USD 230 billion in bill savings in 2030

640 avoided coal-fired power plants in 2030

Electricity savings in 2030 equivalent to the current consumption of India, France and Mexico combined

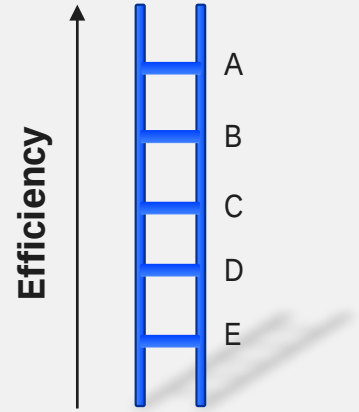
Assumptions: Motors savings potentials are based on differences between the Stated Policies Scenario (STEPS) and the Sustainable Development Scenario (SDS), savings for the other products are based on a separate model with aligned scenarios.
Consumer bill savings are based on current electricity prices in countries where savings accrue. The average coal-fired power plant is assumed to generate 3 TWh per year.
Source: IEA-Provisional estimates subject to change

Performance ladder as a basis to set energy efficiency levels

Ladder steps can be used to define performance requirements, e.g. for:

- Minimum energy performance standards (MEPS)
- Label thresholds for both categorical labels and endorsement labels
- Requirements for rebates (such as obligation programmes)
- Requirements to appear on energy technology lists in general
- Future aspirational targets

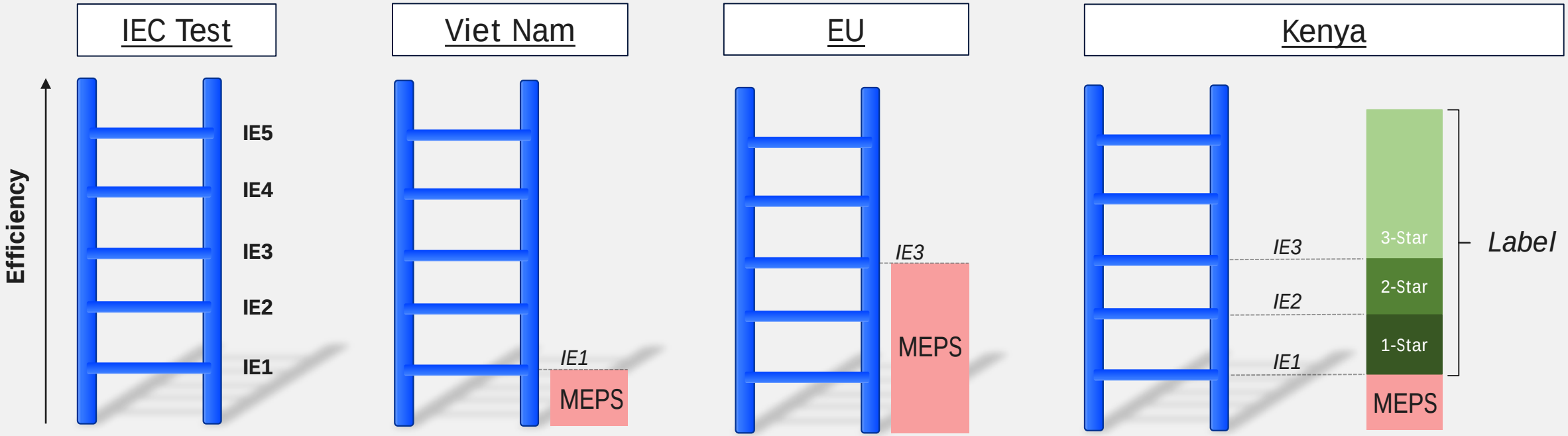
Ideally, steps are used by different policy tools in a coordinated way, and revised over time.



Key steps for developing an energy efficiency ladder:

1. Agree on testing procedures to measure energy efficiency
2. Define efficiency thresholds (tiers or steps on the ladder), plus other requirements
3. Map existing requirements
4. Set the target steps to climb the ladder

Example: Motors – All countries employ the same ladder

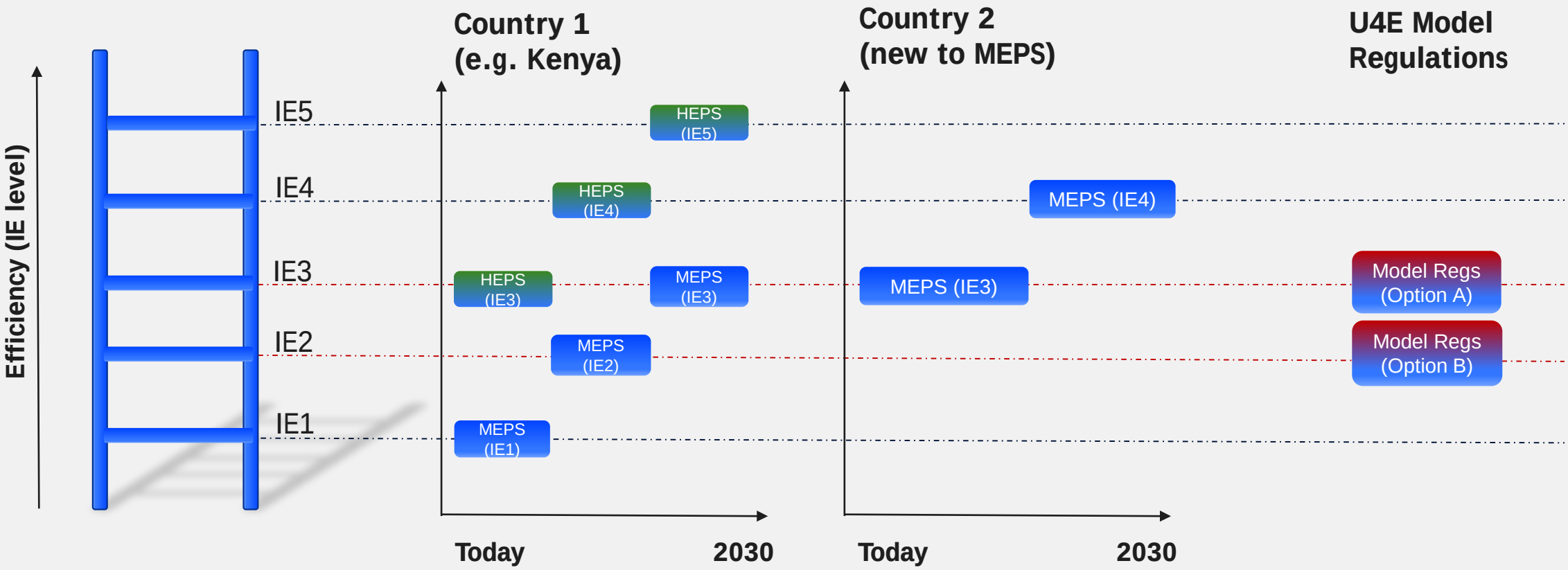


All countries can use the same ladder for their policy thresholds.

Viet Nam (IE1) and the EU (IE3) use different levels for Minimum Energy Performance Standards (MEPS).

Whilst, Kenya currently uses (IE) tiers for its 3-star energy labelling of new electric motors.

Example: Motors – Setting future requirements

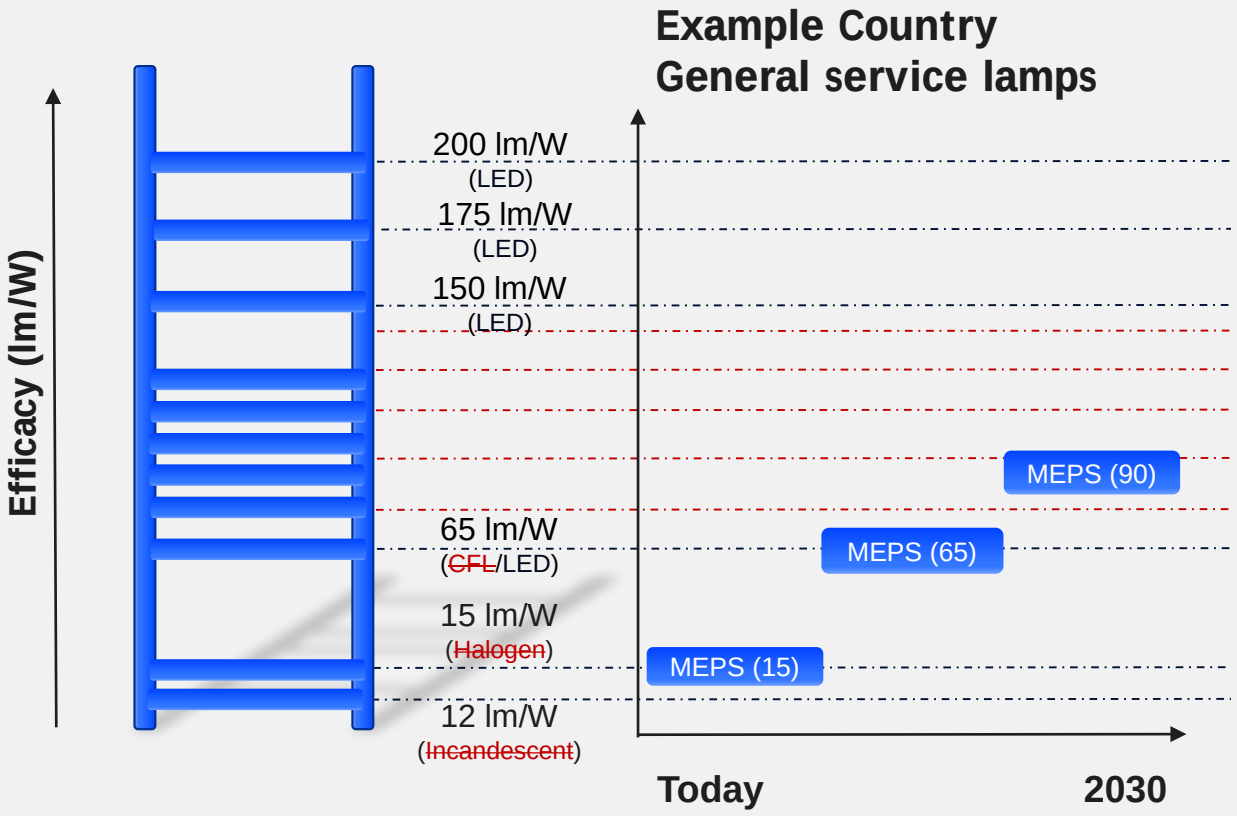


Countries and regions can set different future levels, implementing them at different times.

Identifying future HEPS levels will allow voluntary supporting policy to develop markets for higher efficiency, which can also be future MEPS levels.

The efficiency levels shown above are indicative.

Example: Lighting – Setting future requirements



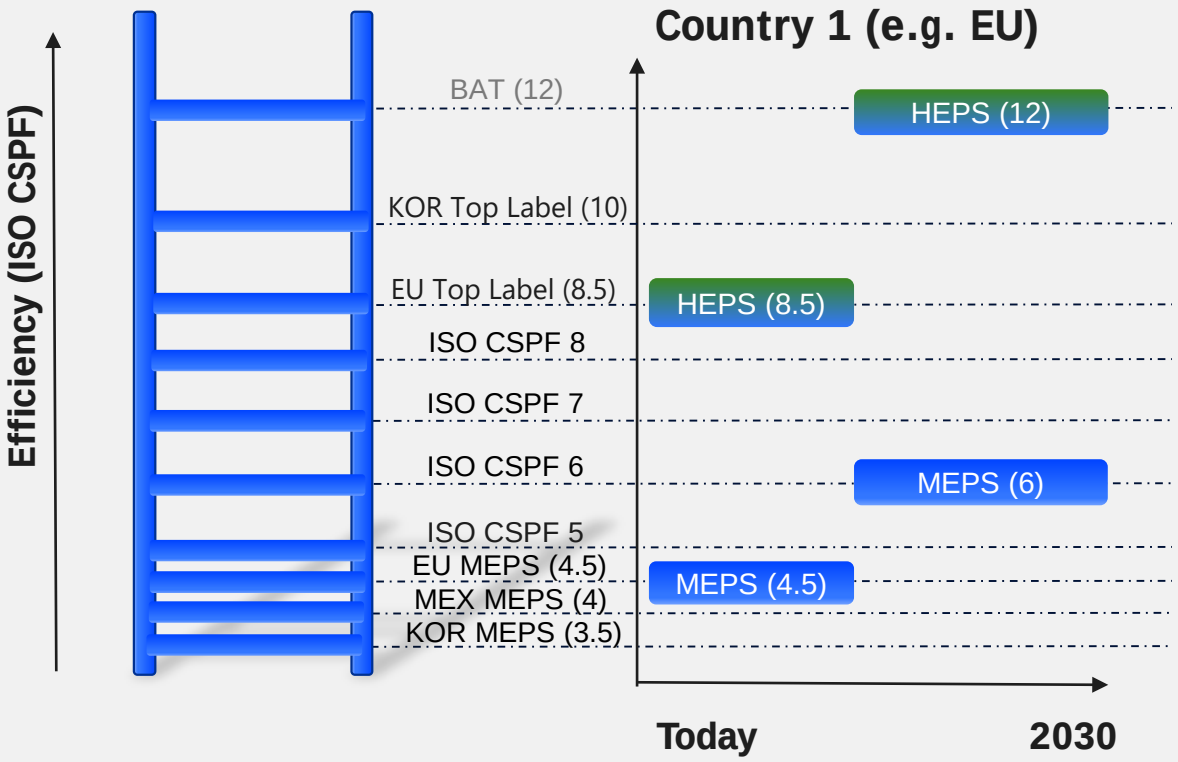
Beyond efficiency, additional criteria may be added to performance requirements, for example:

- Lifetime
- Colour rendering
- Mercury content
- Tolerate dusty environment
- High/low temperature environment

Ideally targets are technology neutral, however efficacy specification can be linked to technology.

The efficacy levels shown above are indicative.

Example: Residential ACs – Setting future requirements



Beyond efficiency, additional criteria may be added to performance requirements, for example:

- Low GWP refrigerant

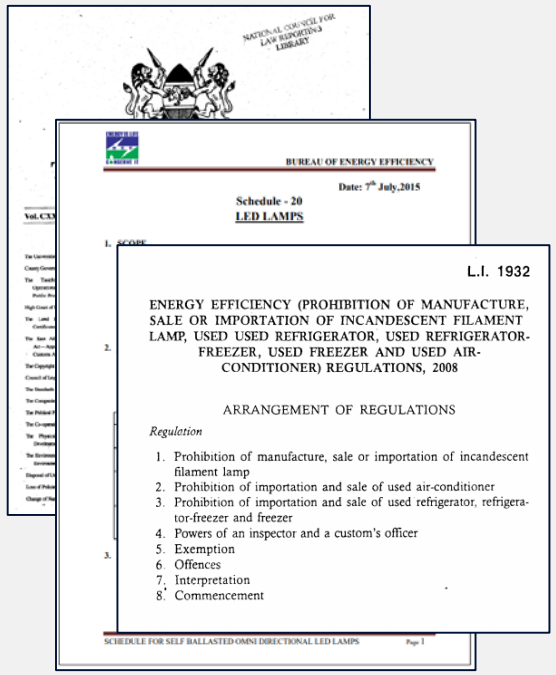
Countries and regions can set different future levels (based on their own metrics), implementing them at different times.

AC testing metrics are converging, though differences remain, so not always cross-comparable.

The efficiency levels shown above are indicative.

Mapping performance levels

Existing regulations



BUREAU OF ENERGY EFFICIENCY

Date: 7th July,2015

Schedule - 20

LED LAMPS

L.I. 1932

ENERGY EFFICIENCY (PROHIBITION OF MANUFACTURE, SALE OR IMPORTATION OF INCANDESCENT FILAMENT LAMP, USED USED REFRIGERATOR, USED REFRIGERATOR-FREEZER, USED FREEZER AND USED AIR-CONDITIONER) REGULATIONS, 2008

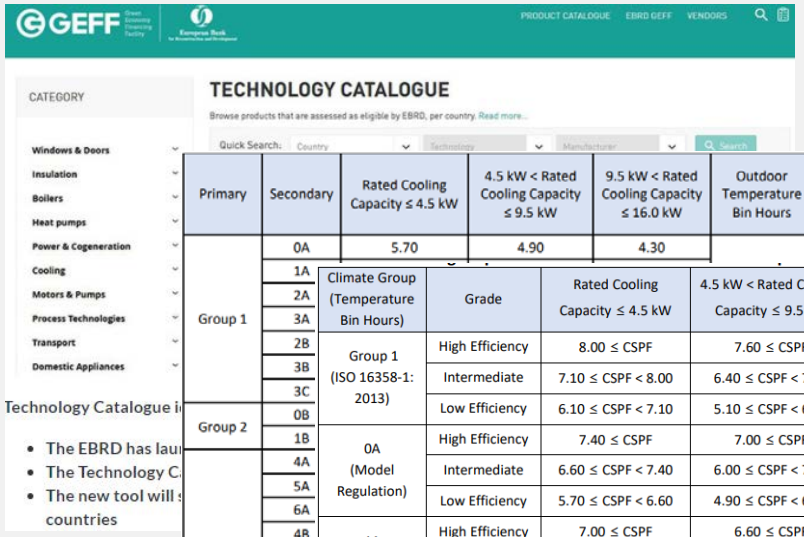
ARRANGEMENT OF REGULATIONS

Regulation

1. Prohibition of manufacture, sale or importation of incandescent filament lamp
2. Prohibition of importation and sale of used air-conditioner
3. Prohibition of importation and sale of used refrigerator, refrigera-tor-freezer and freezer
4. Powers of an inspector and a custom's officer
5. Exemption
6. Offences
7. Interpretation
8. Commencement

SCHEDULE FOR SELF BALLASTED OMNI DIRECTIONAL LED LAMPS

Model regulations, GTS



GEFF

PRODUCT CATALOGUE EBRD GEFF VENDORS

CATEGORY

TECHNOLOGY CATALOGUE

Browse products that are assessed as eligible by EBRD, per country. Read more...

Quick Search: Country Technology Manufacturer Search

Windows & Doors
Insulation
Boilers
Heat pumps
Power & Cogeneration
Cooling
Motors & Pumps
Process Technologies
Transport
Domestic Appliances

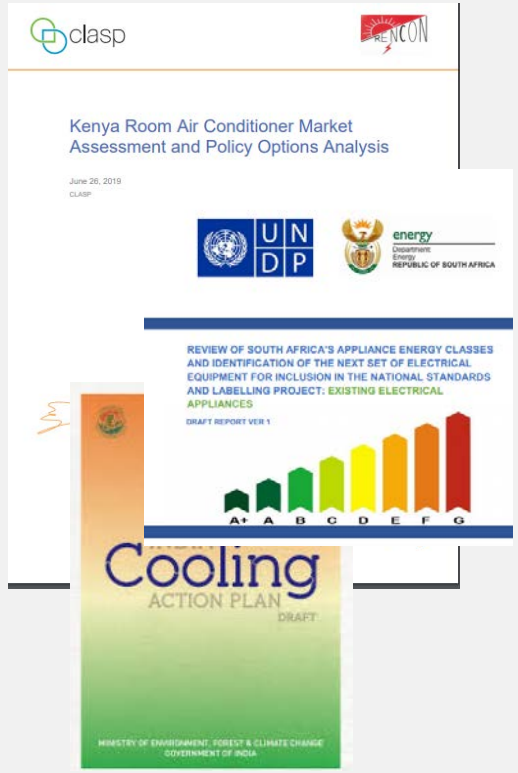
Technology Catalogue i

- The EBRD has lau
- The Technology C
- The new tool will
countries

Primary	Secondary	Rated Cooling Capacity ≤ 4.5 kW	4.5 kW < Rated Cooling Capacity ≤ 9.5 kW	9.5 kW < Rated Cooling Capacity ≤ 16.0 kW	Outdoor Temperature Bin Hours
Group 1	0A	5.70	4.90	4.30	
	1A				
	2A				
	3A				
	2B				
	3B				
	3C				
Group 2	0B				
	1B				
Group 3	4A				
	5A				
	6A				
	4B				
	5B				
	6B				
	7				
	8				

Climate Group (Temperature Bin Hours)	Grade	Rated Cooling Capacity ≤ 4.5 kW	4.5 kW < Rated Cooling Capacity ≤ 9.5 kW	9.5 kW < Rated Cooling Capacity ≤ 16.0 kW
Group 1 (ISO 16358-1: 2013)	High Efficiency	8.00 ≤ CSPF	7.60 ≤ CSPF	7.10 ≤ CSPF
	Intermediate	7.10 ≤ CSPF < 8.00	6.40 ≤ CSPF < 7.60	5.80 ≤ CSPF < 7.10
	Low Efficiency	6.10 ≤ CSPF < 7.10	5.10 ≤ CSPF < 6.40	4.50 ≤ CSPF < 5.80
0A (Model Regulation)	High Efficiency	7.40 ≤ CSPF	7.00 ≤ CSPF	6.60 ≤ CSPF
	Intermediate	6.60 ≤ CSPF < 7.40	6.00 ≤ CSPF < 7.00	5.50 ≤ CSPF < 6.60
	Low Efficiency	5.70 ≤ CSPF < 6.60	4.90 ≤ CSPF < 6.00	4.30 ≤ CSPF < 5.50
1A (Model Regulation)	High Efficiency	7.00 ≤ CSPF	6.60 ≤ CSPF	6.20 ≤ CSPF
	Intermediate	6.20 ≤ CSPF < 7.00	5.70 ≤ CSPF < 6.60	5.20 ≤ CSPF < 6.20
	Low Efficiency	5.40 ≤ CSPF < 6.20	4.70 ≤ CSPF < 5.70	4.20 ≤ CSPF < 5.20
2A (Model Regulation)	High Efficiency	7.30 ≤ CSPF	6.90 ≤ CSPF	6.50 ≤ CSPF
	Intermediate	6.50 ≤ CSPF < 7.30	5.90 ≤ CSPF < 6.90	5.40 ≤ CSPF < 6.50
	Low Efficiency	5.60 ≤ CSPF < 6.50	4.80 ≤ CSPF < 5.90	4.30 ≤ CSPF < 5.40
3A (Model Regulation)	High Efficiency	7.00 ≤ CSPF	6.60 ≤ CSPF	6.20 ≤ CSPF
	Intermediate	6.20 ≤ CSPF < 7.00	5.70 ≤ CSPF < 6.60	5.20 ≤ CSPF < 6.20
	Low Efficiency	5.40 ≤ CSPF < 6.20	4.70 ≤ CSPF < 4.70	4.20 ≤ CSPF < 5.20

Cooling Plans, Roadmaps



clasp

RENCON

Kenya Room Air Conditioner Market Assessment and Policy Options Analysis

June 26, 2019

CLASP

UNDP

energy

Department: Energy

REPUBLIC OF SOUTH AFRICA

REVIEW OF SOUTH AFRICA'S APPLIANCE ENERGY CLASSES AND IDENTIFICATION OF THE NEXT SET OF ELECTRICAL EQUIPMENT FOR INCLUSION IN THE NATIONAL STANDARDS AND LABELLING PROJECT: EXISTING ELECTRICAL APPLIANCES

DRAFT REPORT VER 1

A+ A B C D E F G

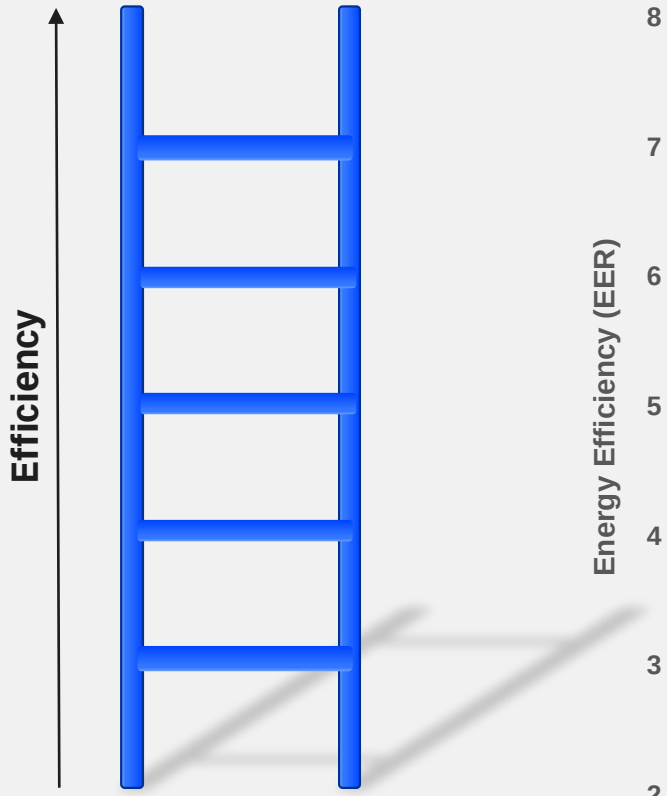
Cooling

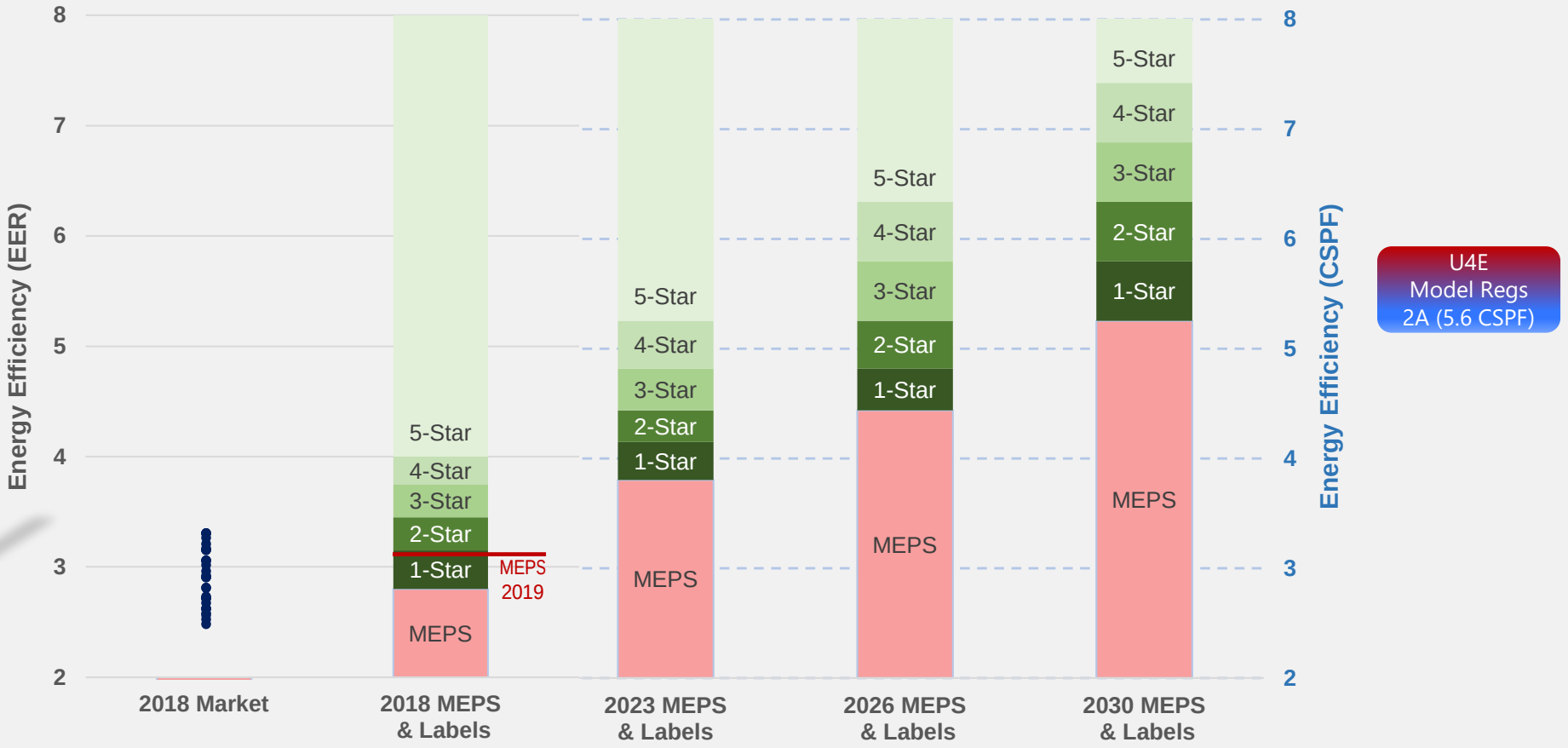
ACTION PLAN

DRAFT

MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE
GOVERNMENT OF INDIA

Example: Residential ACs – Setting future requirements





Kenya 2018 market and current regulations; the future efficiency levels shown above are indicative

Sub-Saharan Africa — Current status: Planned standards and labels offer opportunity for alignment

Countries	ACs		Domestic Refrigerators		Industrial Motors		Domestic Lighting	
	Label	MEPS	Label	MEPS	Label	MEPS	Label	MEPS
SADC (South)								
Lesotho								
Madagascar								
Mauritius								
Seychelles								
South Africa								
Zambia								
ECOWAS (West)								
Benin								
Burkina Faso								
Cabo Verde								
Cote D'Ivoire								
Gambia								
Ghana								
Guinea								
Guinea-Bissau								
Liberia								
Mali								
Niger								
Nigeria								
Senegal								
Sierra Leone								
Togo								
EAC (East)								
Kenya								
Rwanda								
Uganda								

Adopted

Adopted (Mandatory)

Adopted (Voluntary)

Under Development

Planned

Source: Based on ICA

Summary and next steps

Summary of Call to Action

- Targeting four products for improved efficiency to 2030
- Defining future performance tiers, to better enable policy development
- Harmonising future performance regionally/internationally

Next steps

- Country commitment to further raise ambition
- Set future policy pathway to deliver increased efficiency

HM Government

International Energy Agency

Partners:

U4E United for Efficiency

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APEC
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