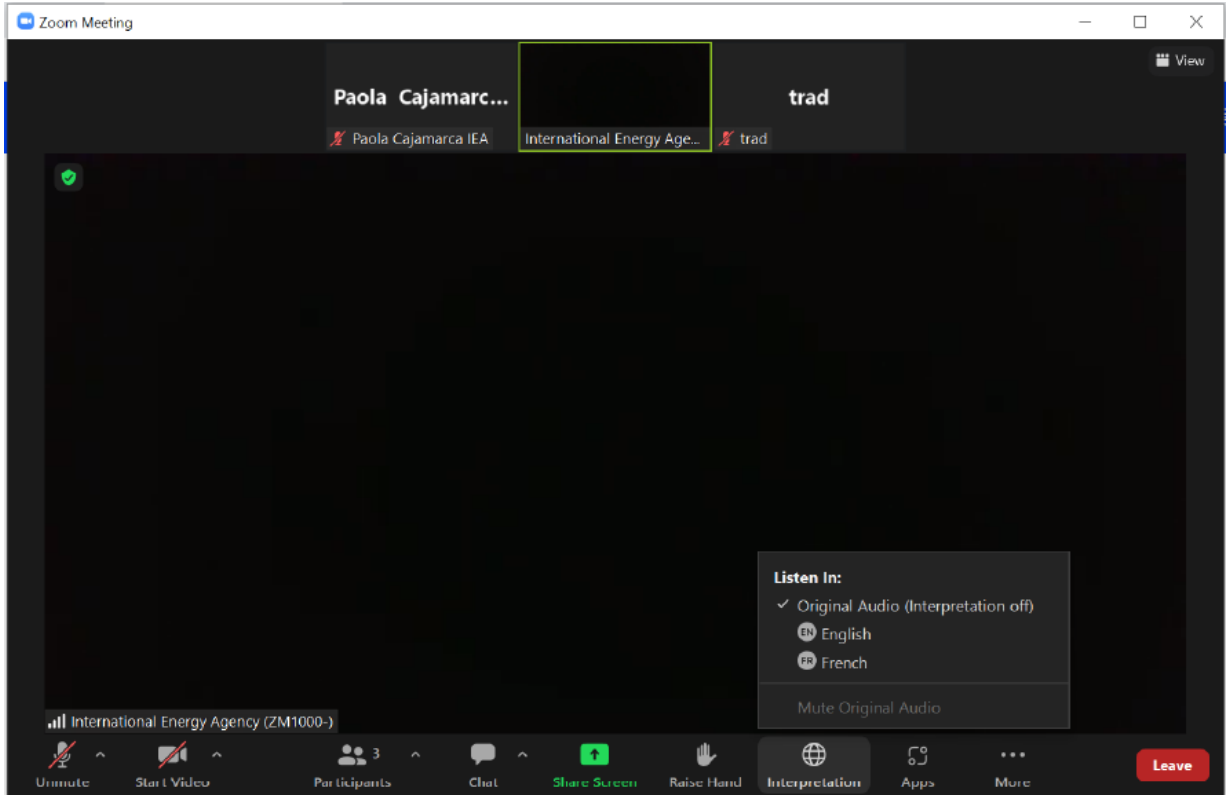
IEA's Regional Training on Energy Efficiency Policy Packages for Sub Saharan Africa

Day 2: Appliances

International Energy Agency

Housekeeping rules

- This event is both in French and English and translation is available.
- Please keep your microphone **on mute**, and leave your camera on, if possible.
- Do not hesitate to ask questions through the chat and we will try to address them if time allows.
- In case of technical issues please contact us through the chat or send us an email at: energy.efficiency@iea.org
- We will be engaging through menti polls and encourage everyone to participate.



Regional Training on Energy Efficiency Policy Packages for Sub Saharan Africa

21-25 November 2022

Day 2 – Appliances

AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE DE DÉVELOPPEMENT

Melanie Slade

Senior Programme Manager
Energy Efficiency Division IEA

Agenda

Day 2: Appliances (Paris time CET)	
10h00	OPENING REMARKS **Melanie Slade**, International Energy Agency
10h10	OPENING PRESENTATION **Presentation by Clara Camarasa**, International Energy Agency
10h30	PRESENTATION INTERNATIONAL BEST PRACTICE: THE EUROPEAN UNION **Presentation by Emma Olsson**, European Commission
10h50	PRESENTATION BY A REGIONAL EXPERT **Presentation by Ashanti Mbanga,** SANEDI
11h10	PRESENTATION BY A REGIONAL EXPERT **Presentation by Hubert Nsoh Zan**, Ghana Energy Commission
11h30	PANEL DISCUSSION: • What are the key elements of an impactful appliance policy package? • What are the important steps for the implementation of an impactful appliance policy package? How do they differ in short-term versus long-term? • What are the key steps in developing a regional harmonisation of minimum energy performance standards and energy labels?
11:55	CLOSING REMARKS **Clara Camarasa**, International Energy Agency

Menti

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MENTI #1

In one or two words describe (in English) what is the first thing that comes to mind when you think about appliance energy efficiency policy?

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Clara Camarasa

Energy Policy Analyst,
International Energy Agency (IEA)

International Energy Agency

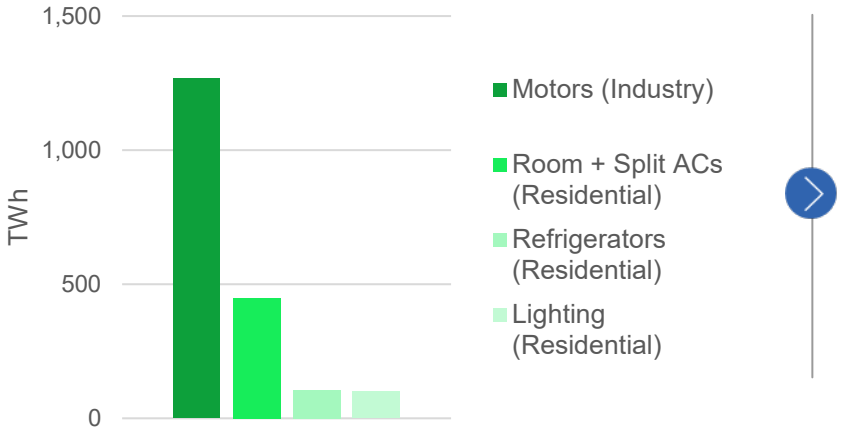
Introduction to Appliance Energy Efficiency Policy Package in Sub Saharan Africa

Dr. Clara Camarasa

22 November 2022.

Global savings potential from product efficiency

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



Savings potential in 2030 is equivalent to:

More than USD **230** billion in bill savings

640 avoided coal-fired power plants

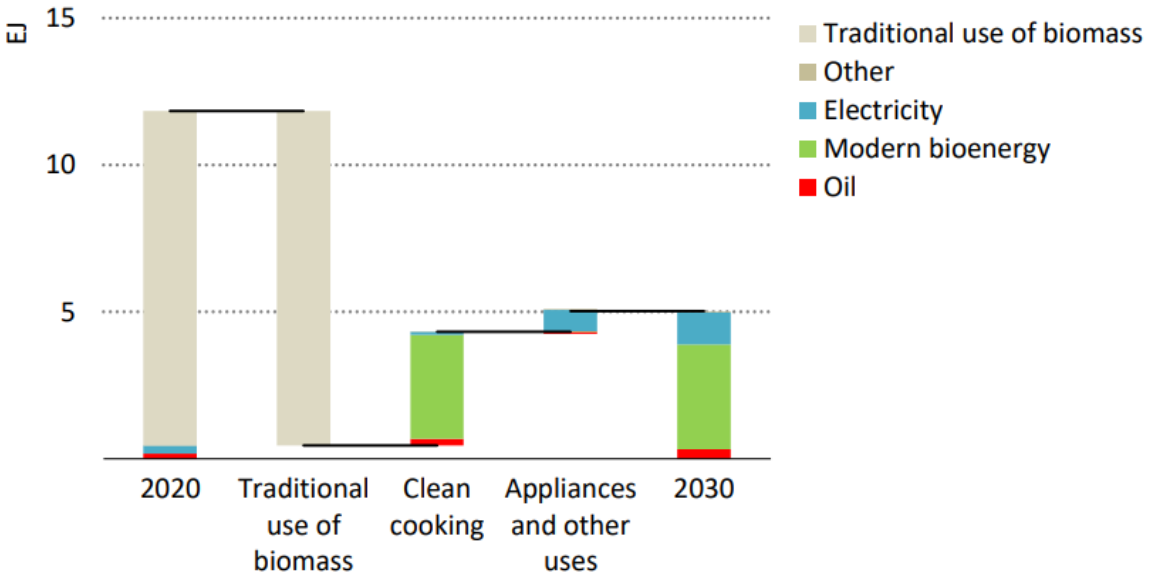
Electricity savings equivalent to the current consumption of **India, France and Mexico** combined

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

Sub-Saharan Africa savings potential product efficiency

Change in residential energy demand by fuel in sub-Saharan Africa in the Sustainable Africa Scenario (SAS), 2020-2030



- As Africa's demand for modern energy grows, efficiency keeps it affordable
- Product efficiency is crucial in the pathway towards affordable clean energy access

Replacing traditional use of biomass with more efficient clean cooking solutions and efficient appliances more than offsets rising energy services demand

Economy-wide benefits of acting on appliance efficiency

- Installing the infrastructure, supply chains and appliances to give **households access to modern energy services**, **particularly in rural areas**, requires an extensive local work force, both in building new facilities, as well as operating and maintaining them.

- **The expansion of reliable and affordable electricity supplies is a key driver of economic activity, higher incomes and employment**. For example, access to electricity would allow households to power small appliances such as sewing machines or refrigerators, which can support entrepreneurial opportunities – especially for women.

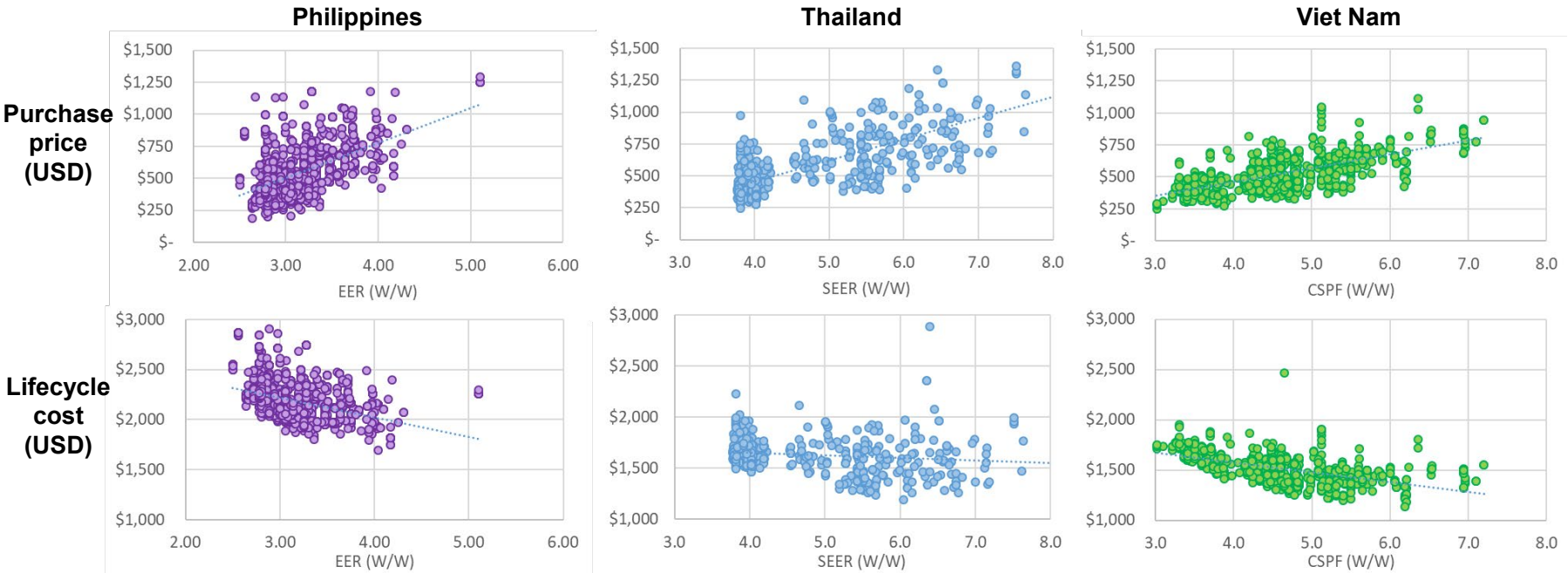
- **Jobs related to energy access** can help **give** workers the **needed skills and experience to take new jobs in services**, manufacturing and construction amid broader shifts in the labour force and urbanisation.

- More efficient equipment can reduce dependence on obsolete refrigerants and **stimulate investment in local manufacturing**.

- Minimum performance standards measures (MEPS) and mandatory energy labels **can lower energy consumption, cut energy bills, reduce government spending on subsidies and avoid greenhouse gas emissions**.

Residential ACs – Cost vs. efficiency

Purchase price and lifecycle cost vs. efficiency in selected ASEAN markets in 2019



Notes: ACs normalised to electricity consumption of 1,000 kWh/year and cooling capacity of 12,000 BTU/hr. Source: Based on IEA (2019). The Future of cooling in Southeast Asia.

More efficient ACs do not necessarily incur higher purchase prices and in most cases have lower lifecycle costs thanks to lower energy running costs

Major trading countries on selected products

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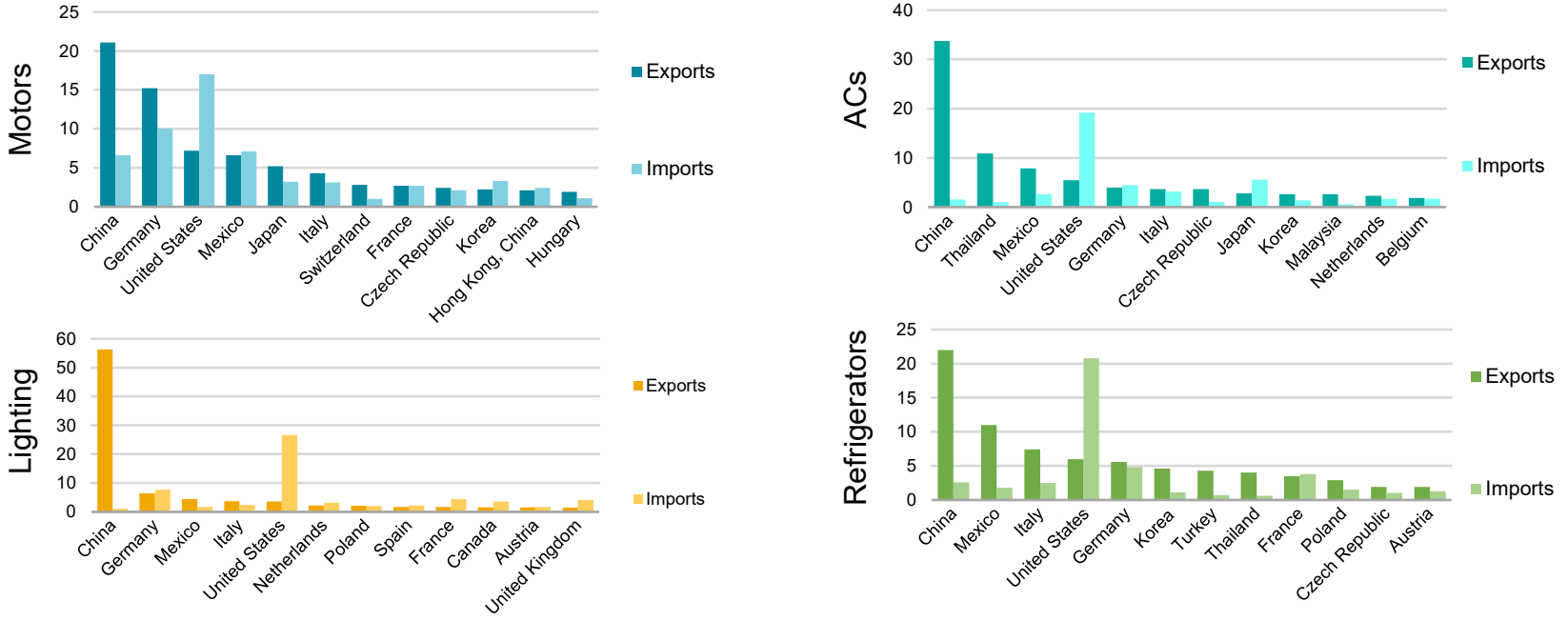
Major trading countries in terms of value, 2018 (Share in world trade value, %)



Sources: UN COMTRADE and International Trade Center statistics

It is a global market for appliances which calls for global coherence in Standards and Labels (S&L) and testing procedures

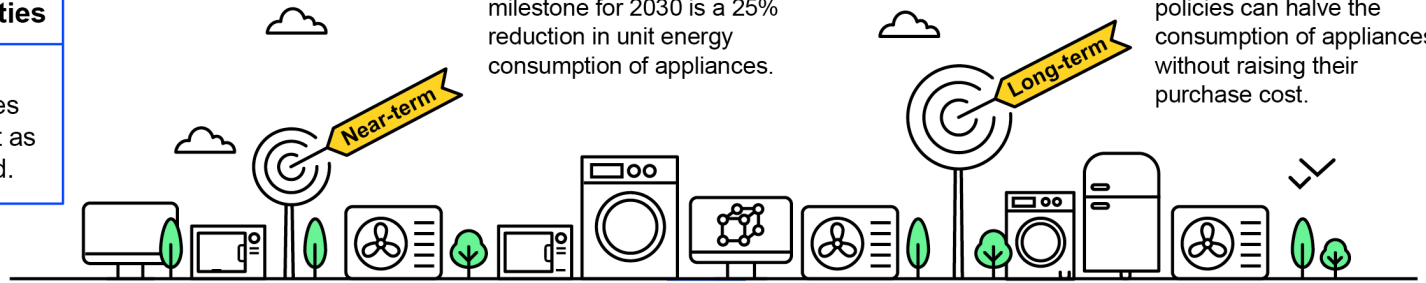
Appliance Efficiency Policy Package

Immediate opportunities

In most markets, it is possible to buy appliances that are twice as efficient as those typically purchased.

The **Net Zero** Scenario milestone for 2030 is a 25% reduction in unit energy consumption of appliances.

Long-term appliance policies can halve the consumption of appliances without raising their purchase cost.



REGULATION

INFORMATION

INCENTIVES

- **Policies are critical to support large scale deployment of efficient products.**
- **In the longest-running programmes, policies have helped halve the energy consumption of key appliances.**
- **Policy packages** are built on the foundation of **three essential elements: regulation, information and incentives.**

Appliance Efficiency Policy Package - Regulation

REGULATION

- **Minimum Energy Performance Standards** exclude the least efficient products from the market; they should be in line with international best practice, while reflecting good understanding of local circumstances; and be regularly updated. Regulations are essential for moving the market towards the best available technology in line with achieving net zero targets.
- **Regulation** can ensure that new appliances are “demand response ready” in order to offer flexibility to the end-user and the overall system and reduce peak demand.

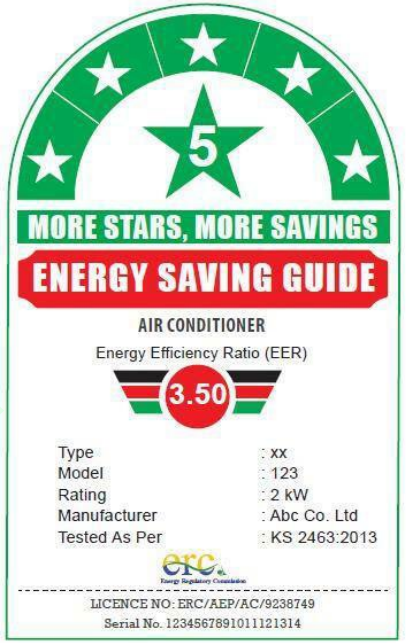
- **Minimum Energy Performance Standards (MEPS)** are a highly cost-effective way to improve equipment efficiency.
- If only one policy instrument should be implemented, that should be MEPS.
- Standards should be accompanied by **mandatory labelling,** and targeted **incentives** to make, sell and install the most efficient appliances.
- Lighting is an excellent starting point for MEPS as it enables processes to be trialled and understood, and once established, other products can be regulated through the same process.
- African countries (e.g., Ghana, South Africa, Nigeria) are implementing, revising and/or expanding their MEPS.

Appliance Efficiency Policy Package – Information

INFORMATION

Information policy instruments advice consumers on key aspects and wider benefits of efficient appliances.

- **Labels** inform consumers, identifying the most efficient appliances and encouraging purchases based on life time costs.
- **High Efficiency Performance Specifications** identify the best performing products and are often used as the basis for labels and incentives.
- **Consumer information campaigns**, help people make informed decisions. These are most effective when based on behavioural insights and targeted strategies.



The Kenya Refrigerator Energy Label. Source: Cool Coalition

- In **Ghana** the ratings on their labels are re-categorised from one-star to seven-star to indicate their standard of efficiency
- The **Kenyan** Standards and Labelling program covers refrigerators, air-conditioners, motors and lightings which are mandatory under the Standards and Labelling scheme.
- **Mauritius** established the 156 MS203:2011 standard entitled “Energy efficiency and labeling requirements.” for residential and non-residential.

Appliance Efficiency Policy Package - Incentives

INCENTIVES

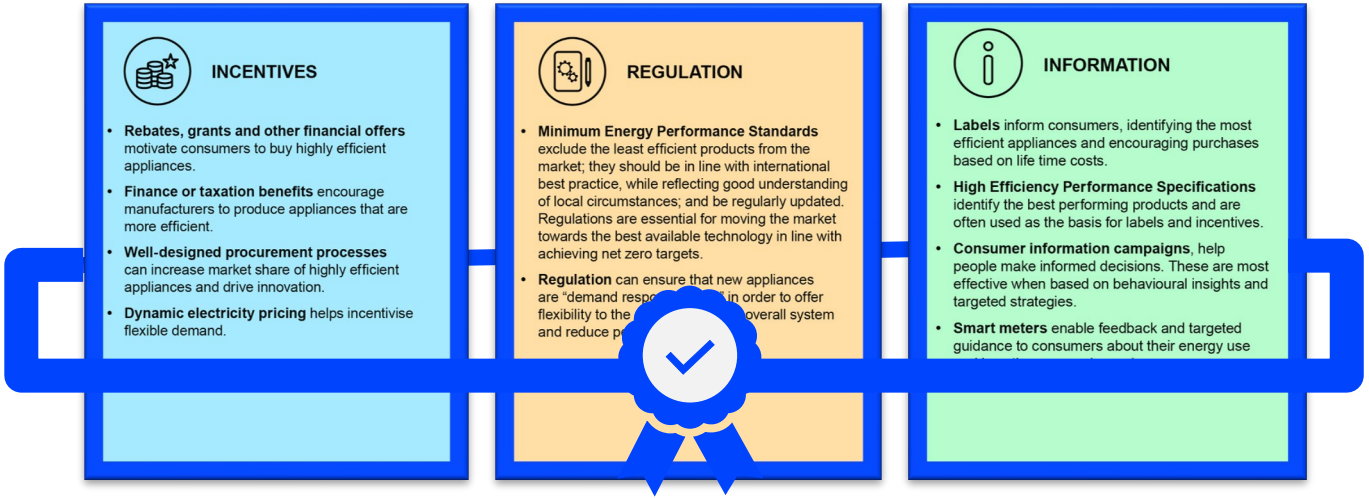
An incentive is **any system adopted to motivate the behaviour of people**.

- **Rebates, grants and other financial offers** motivate consumers to buy highly efficient appliances.
- **Finance or taxation benefits** encourage manufacturers to produce appliances that are more efficient.
- **Well-designed procurement processes** can increase market share of highly efficient appliances and drive innovation.
- **Dynamic electricity pricing** helps incentivise flexible demand.

- **R-COOL WITH GREEN ON-WAGE FINANCING IN RWANDA** a program that incentivises households and micro-entrepreneurs to return end-of-life cooling equipment and acquire certified higher-efficiency cooling appliances in exchange.

- **PROSOL PROGRAMME IN TUNISIA** stimulated the market for solar thermal heaters, where consumers could purchase solar water heaters with minimal upfront costs by providing investment subsidies on a loan with a duration of 5 years - 270,000 new systems were installed between 2005 and 2015.

Appliance Efficiency Policy Package

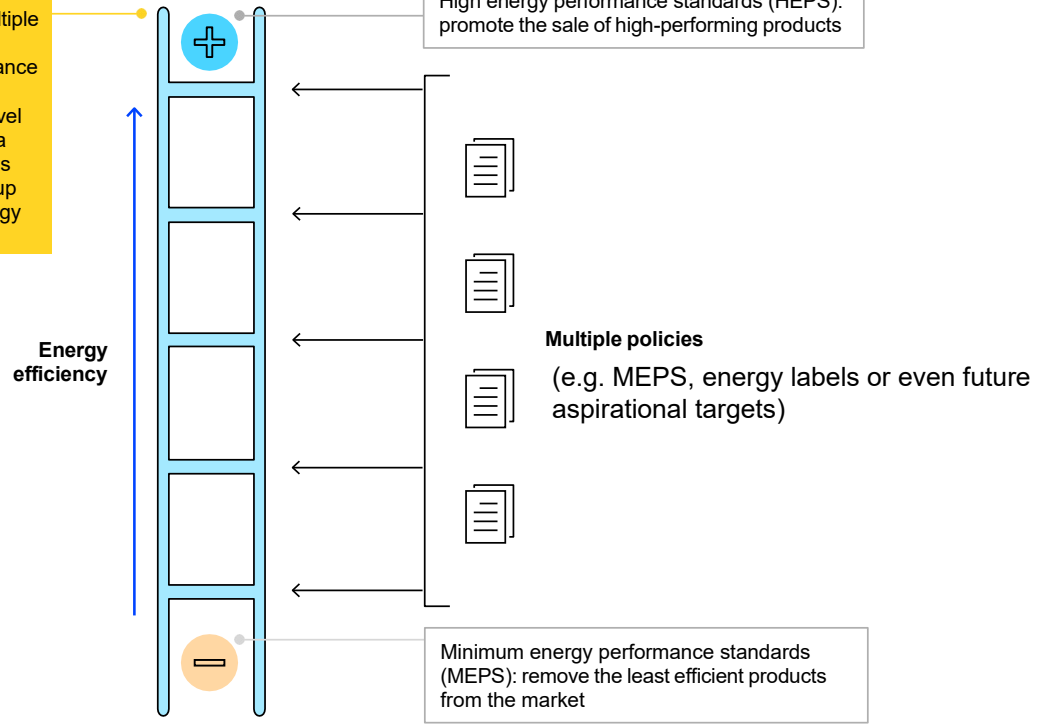


- **Each instrument acts independently**, **yet the combination** of the three **ensures an effective policy intervention.**
  - Examples of appliance policy packages are the European Union or the EELA project in Africa.

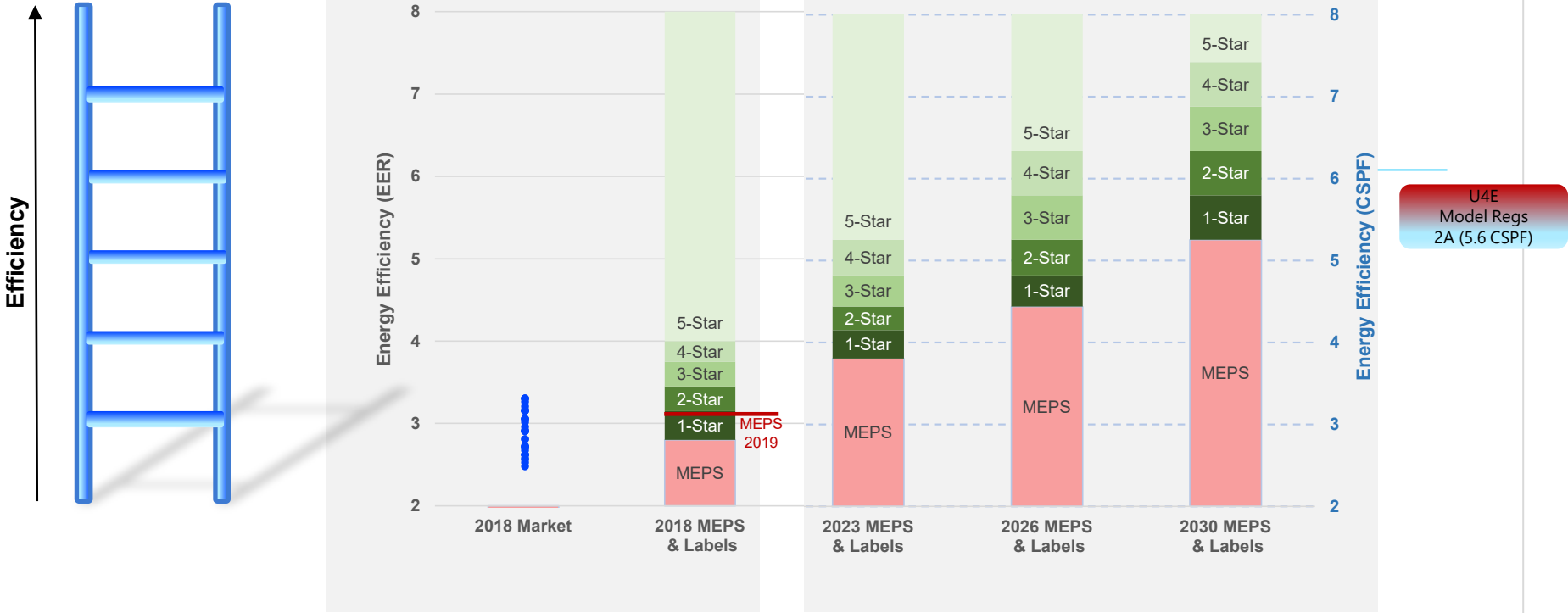
The Energy Performance Ladder' framework

The Energy Performance Ladder framework is a visual representation of the progress to increase energy efficiency in selected products

The energy performance ladder brings together multiple policies under a single consistent set of performance thresholds. Each step on the ladder represents a level of energy efficiency that a discrete policy threshold is set at. As policies move up the ladder appliance energy performance improves.



Example: Residential ACs – Setting future requirements



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

Current status of MEPS and Labels in Africa

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Planned standards and labels offer opportunity for regional 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

**Table being updated and will take information from those making progress in this space.*

Regional pathways & coordination to drive ambition

- **Appliance efficiency measures need to be implemented across the continent** as one country that does not implement them **risks becoming the dumping ground for the least efficient equipment**.
- **Moving together to introduce and harmonise efficiency standards can bring considerable economic gains**, by sending strong market signals and reducing the political and institutional cost of designing and implementing policies.
- **A number of efforts have taken place in Africa to develop and harmonise regional standards.**
  - The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) is leading efforts in West Africa to develop and harmonise standards.
  - A 90 lumens per Watt lighting standard was recently adopted in Southern African Development Community (SADC) member countries.
  - Much work driven by Initiatives and organisations such as U4E, UNIDO and CLASP
- **Ghana and Nigeria endorsed the COP26 Product Efficiency Call to Action in November 2021 -** aims to set countries on a trajectory to double the efficiency of key products sold globally by 2030
- **Ghana and South Africa are members** of the Super-Efficient Equipment and Appliance Deployment Initiative (**SEAD**)

Key points

- **Product efficiency is crucial in the pathway towards affordable clean energy access in Africa**, **ensuring** overall **energy demand savings** particularly in the sub-Saharan residential sector.

- **More efficient products do not necessarily incur higher purchase prices.**

- **Effective appliance energy efficiency policies (e.g. MEPS and labels) can lower energy consumption, cut energy bills, maximise opportunities for new, good quality skilled jobs, reduce government spending on subsidies.**

- A **global market for appliances** calls for **global coherence in standards, labels and testing procedures.**

- **Greatest efficiency gains are achieved by a package of policies** including **regulation, information and incentives.**

- The **Energy Performance Ladder framework** is a simple visual policy tool that brings together different appliance efficiency policies under a single consistent set of thresholds **showing a clear trajectory for improving efficiency over time.**

- **Regional pathways and coordination are crucial to drive ambition** allowing the market to transition. Efforts are already taking place in Africa and sub-Saharan Africa with support of initiatives such as U4E and CLASP.

MENTI #2

In your view, what is the most important policy instrument to accelerate energy efficiency in appliances in your country or region?

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Emma Olsson

European Commission

MENTI #3

What elements of the policy package does your government currently have in place for appliances?

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Ashanti Mbanga

South African National Energy Development Institute (SANEDI)

MENTI #4

On a scale of 1 to 5 (where 5 is very important and 1 is not important at all) evaluate the following barriers to improving energy efficiency in appliance in terms of their importance and relevance in your country?

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Hubert Nsoh Zan

Energy Efficiency, Inspection and Enforcement, Ghana Energy Commission

MENTI #5

In your opinion, what are (or could be) the main drivers to implement an effective appliance energy efficiency policy package in your country or region?

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Panel Discussion: Regional Perspectives on Energy Efficiency

Clara Camarasa

International Energy Agency (IEA)

Emma Olsson

European Commission

Ashanti Mbanga

Appliance Standards and Labelling (SANEDI)

Hubert Nsoh Zan

Energy Efficiency, Inspection and Enforcement, (Ghana Energy Commission)

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Panel Discussion

- What are the key elements of an impactful appliance policy package?
- What are the important steps for the implementation of an impactful appliance policy package? How do they differ in short-term versus long-term?
- What are the key steps in developing a regional harmonisation of minimum energy performance standards and energy labels?

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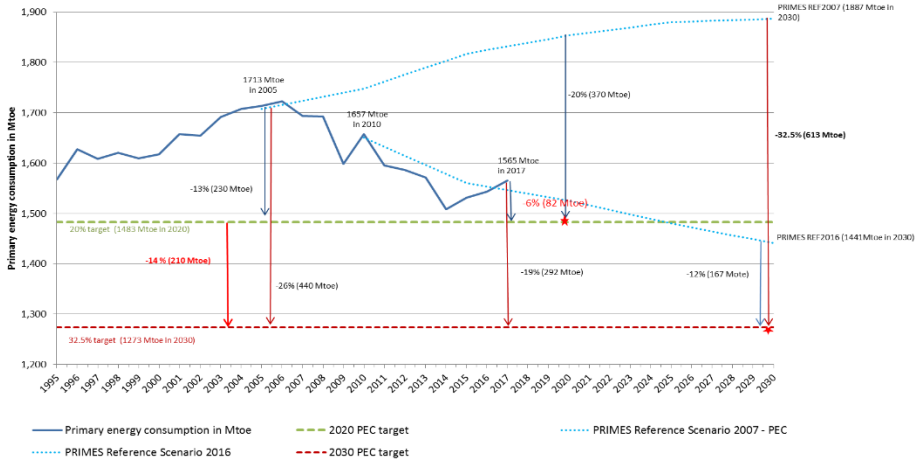
Ecodesign and Energy Labelling

Resource efficient products through EU policy frameworks

Energy efficiency 1st!



Horizontal, holistic guiding principle:

- **only the energy really needed is produced**
- **investments in stranded assets are avoided**
- **demand for energy is reduced and managed in a cost-effective way**

- Meet EU's climate objectives
- Reduce dependence on fossil fuels and increase security of supply
- Increase the use of renewable energy (e.g. via smartness, priority to demand-side).

Often underestimated in existing planning and investment programmes:

- A clearer priority in the recast Energy Efficiency Directive and in the Renovation Wave strategy
- Guidelines on its application: C(2021) 7014 final.

European Commission

EU policy framework for energy efficiency - Energy efficiency 1st!

Energy Efficiency
Directive 2012/27/EU

Energy Performance of Buildings
Directive (EU) 2018/844

Ecodesign
Directive 2009/125/EC

Energy Labelling
Regulation (EU) 2017/1369

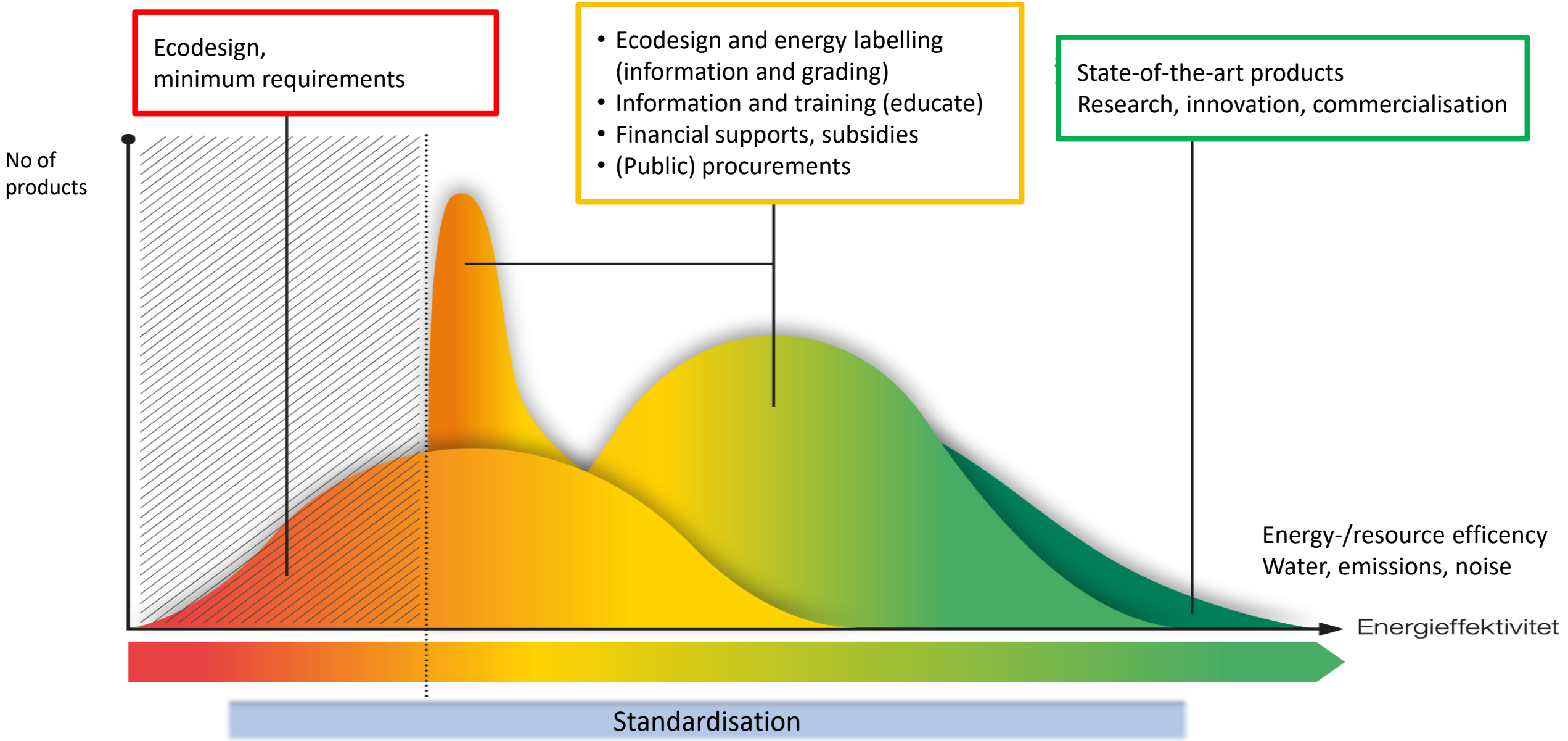
Tyre Labelling
Regulation (EU) 2020/740

Financing Energy Efficiency

European Structural Investment Fund; Horizon 2020; LIFE + funding;

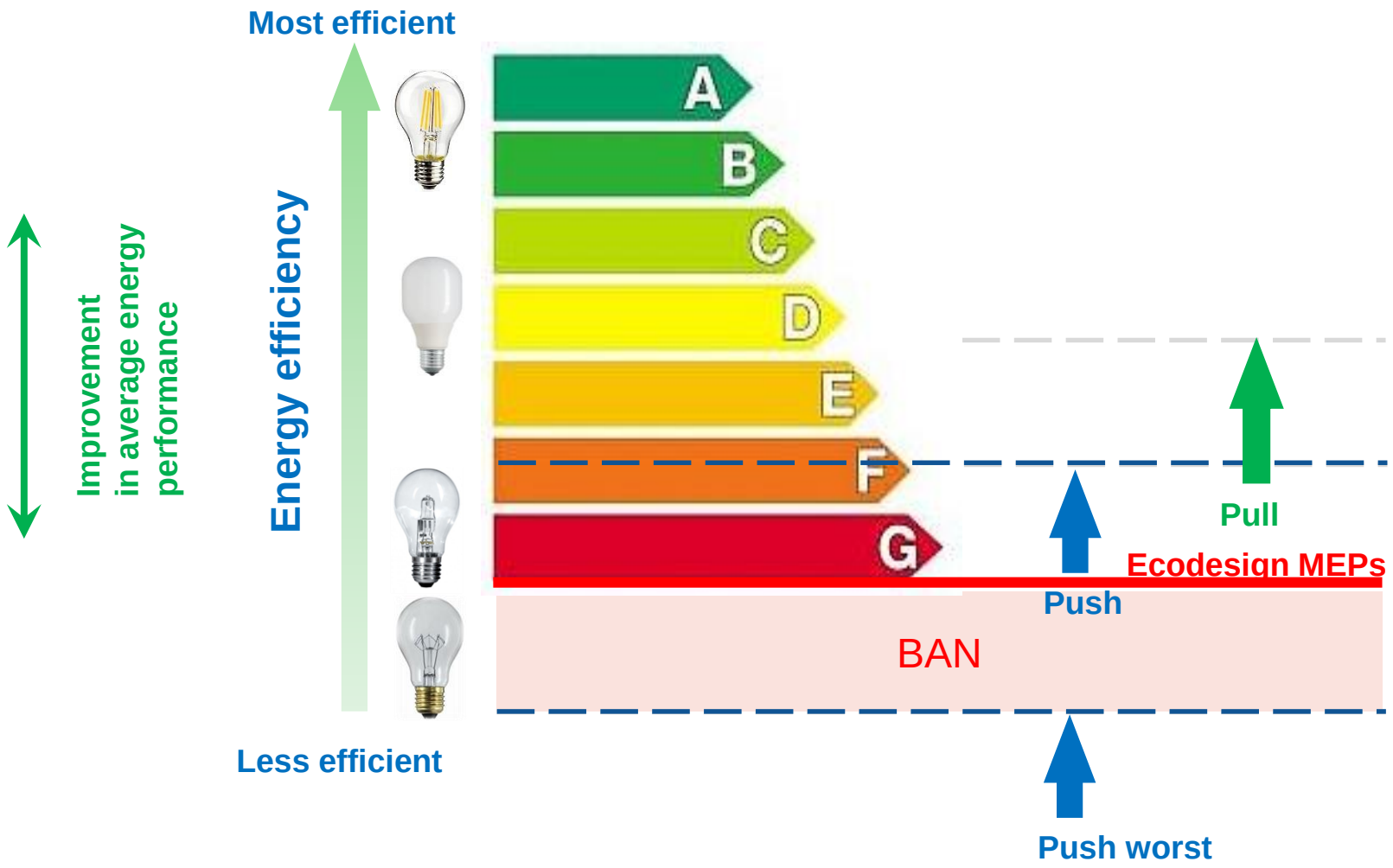
European Fund for Strategic Investments; Member State programmes; etc.

Product policy: a process for innovation and efficiency



With courtesy of the Swedish Energy Agency

Ecodesign + labelling: push-pull combined effect



Labelling:
Targets **users**
Pulls the market
Provides information on performance

Ecodesign:
Targets **manufacturers**
Pushes the market
Sets minimum requirements

European Commission

Scope

Framework rules are complemented by product-specific regulations

- 50 implementing measures in place, 31 product groups (+horizontal "standby")
- ≈ 3 billion products in scope sold in 2020
- Consume ≈ 50% EU final energy

30 Ecodesign regulations

1275/2008	Electric power consumption standby and off mode
107/2009	Simple set-top boxes
641/2009	Circulators
327/2011	Industrial fans
206/2012	Air-conditioning products and comfort fans
547/2012	Water pumps
932/2012	Household tumble driers
617/2013	Computers
666/2013	Vacuum cleaners
801/2013	Networked standby
813/2013	Space heaters
814/2013	Water heaters & storage tanks
66/2014	Domestic ovens, hobs and range hoods
548/2014	Power transformers
1253/2014	Ventilation units
2015/1095	Professional refrigeration
2015/1185	Solid fuel local space heaters
2015/1188	Local space heaters
2015/1189	Solid fuel boilers
2016/2281	Air heating and cooling products, process chillers
2019/424	Servers and data storage products
2019/1782	Electric motors
2019/1782	External power supplies
2019/1784	Welding equipment
2019/2019	Household refrigerating appliances
2019/2020	Lighting sources
2019/2021	Electronic displays (televisions)
2019/2022	Household dishwashers
2019/2023	Household washing machines
2019/2024	Commercial refrigeration

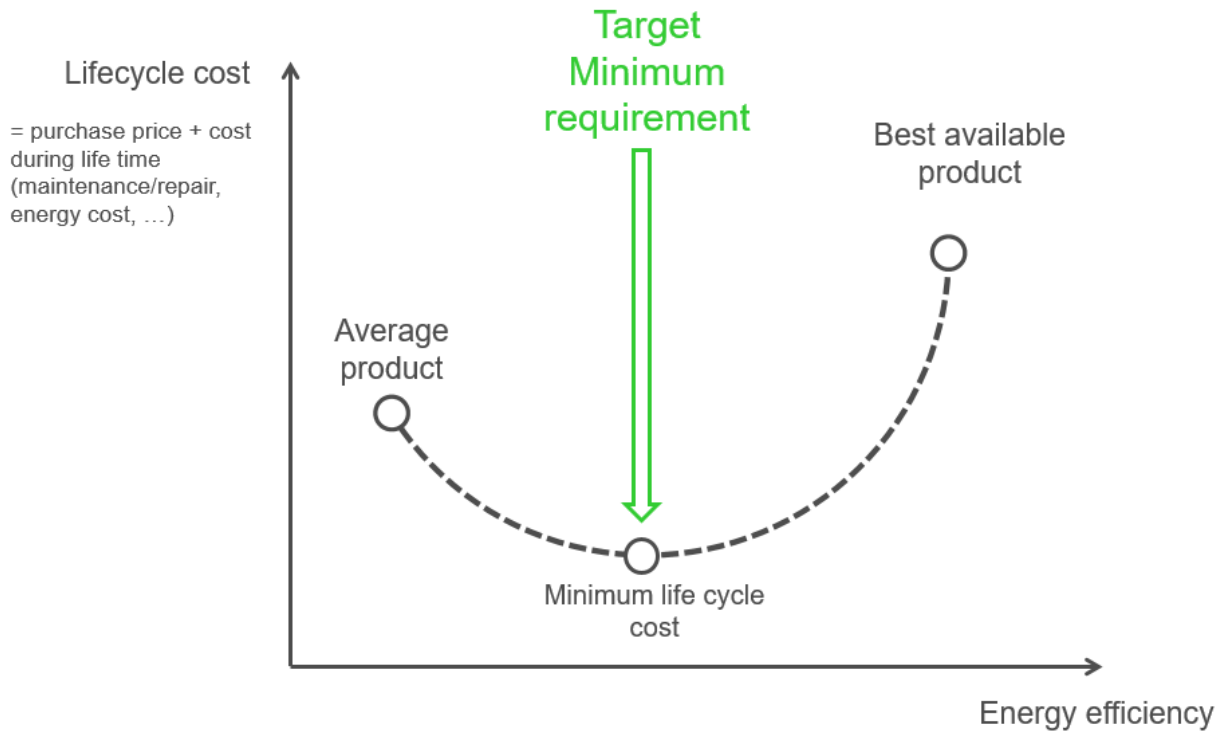
16 Energy labelling Regulations (25 product groups)

626/2011	Air conditioners
392/2012	Household tumble driers
811/2013	Space heaters
812/2013	Water heaters & storage tanks
65/2014	Domestic ovens, hobs and range hoods
1254/2014	Residential ventilation units
2015/1094	Professional refrigeration
2015/1186	Local space heaters
2015/1187	Solid fuel boilers
2019/2013	Electronic displays (televisions, monitors, signage)
2019/2014	Household washing machines
2019/2015	Lighting sources
2019/2016	Household refrigerating appliances
2019/2017	Household dishwashers
2019/2018	Commercial refrigeration
2020/740	Tyres labelling

Energy label and ecodesign | European Commission (europa.eu)

European Commission

Scope of aspects



- Min/max requirements
  - Limits that have to be achieved for the product to be put on the EU market
  - Documentation on how the performance is ensured (proof)
- Parameters?
  - **Energy efficiency**
  - Water use
  - Emission
  - Noise
  - Linked with functionality!

..but also addressing material efficiency

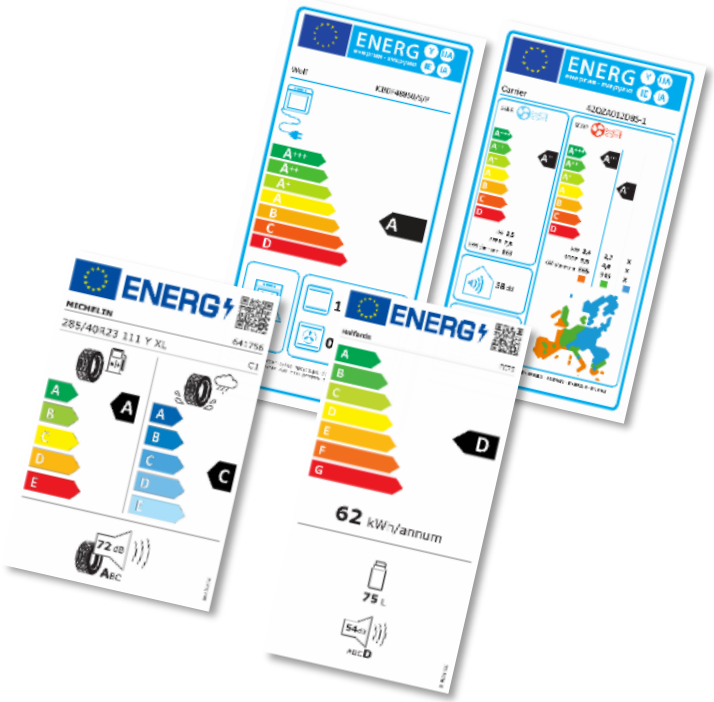
- Durability, reliability
- Repairability:
- Reuseability, recyclability, end of life

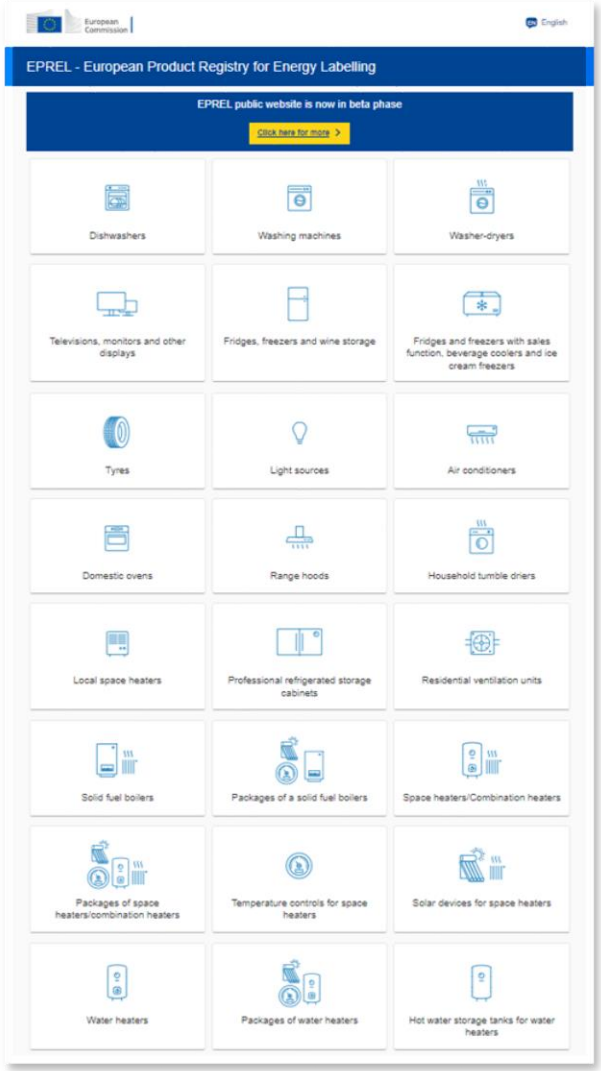
European Commission

Scope of aspects

Information requirement

- Parameter (what)
- Defined
  - conditions, modes, etc (standardized and comparable)
- Format:
  - designed labels and product information sheets
- Availability:
  - with products, at point of sales, on websites, in product database

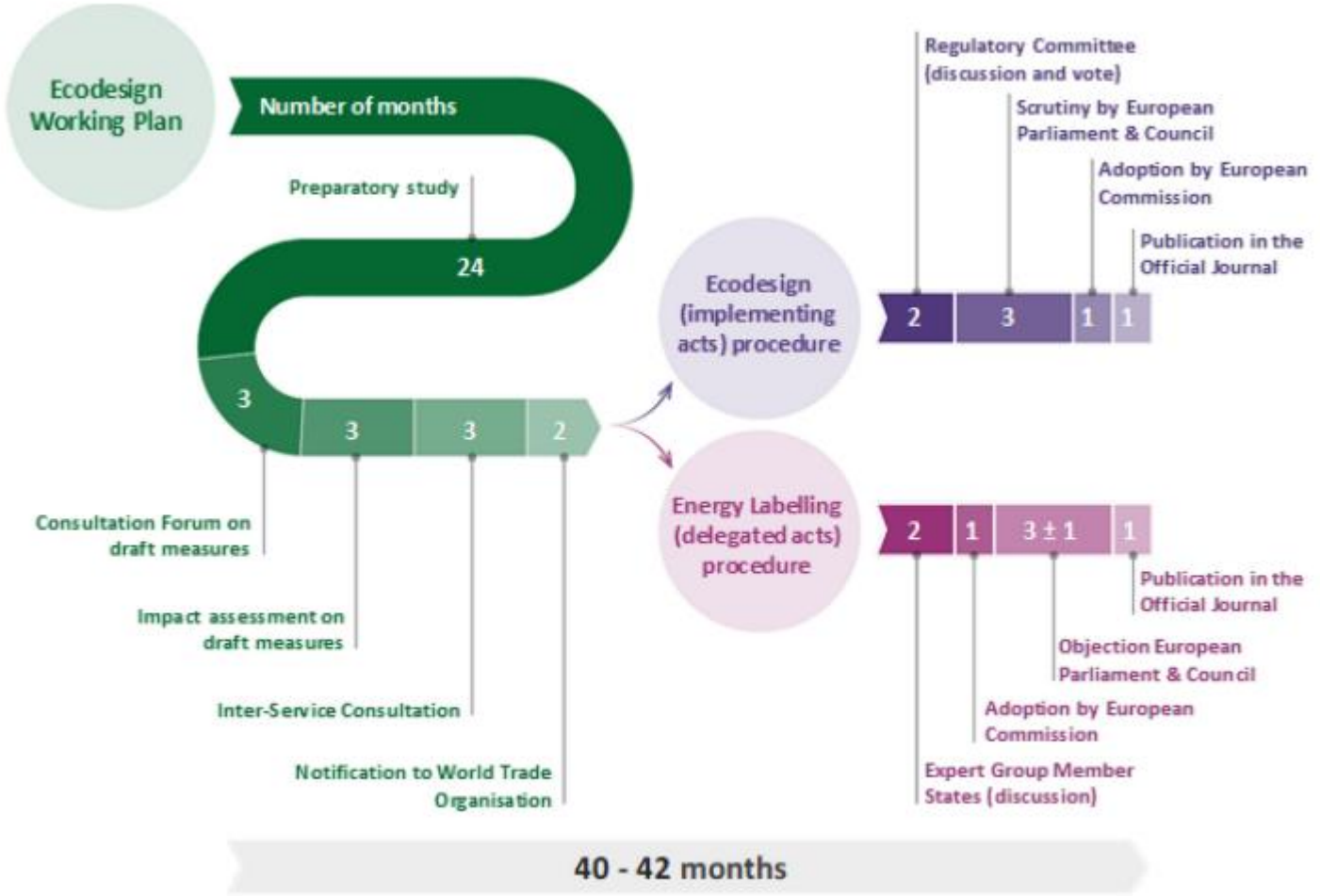




https://eprel.ec.europa.eu/

European Commission

Legislative process



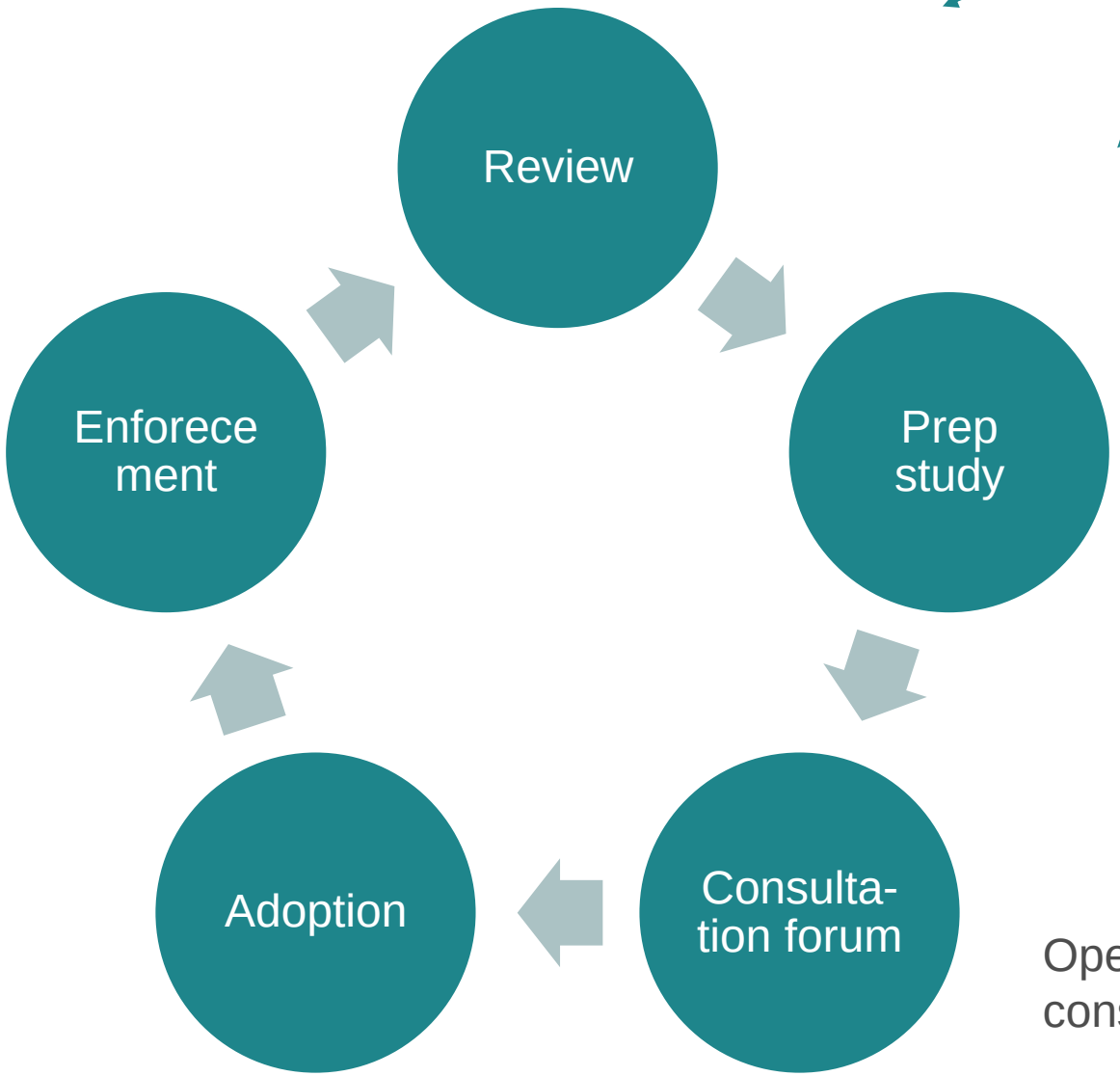
Source: ECA, based on information from the European Commission.

- Studies and proposals with open consultations
- Consultation forum with industry and trade organisation, civil society (environmental and consumer Ngos) and member states (MS)
- Committee/Expert group with member states (27)

Source: European Court of Auditors, Special report, EU action on Ecodesign and Energy Labelling: important contribution to greater energy efficiency reduced by significant delays and non-compliance, 2020, ISBN 978-92-847-4104-5

European Commission

Circular process (simplified)



Market surveillance

Implementation

Communication

preparatory study following the Methodology for the Ecodesign for Energy-related Products (MEErP), consisting of 7 tasks:

- Task 1 – Scope (definitions, standards and legislation);
- Task 2 – Markets (volumes and prices);
- Task 3 – Users (product demand side);
- Task 4 – Technologies (product supply side, includes both BAT and BNAT);
- Task 5 – Environment & Economics (Base case LCA & LCC);
- Task 6 – Design options;
- Task 7 – Scenarios (Policy, scenario, impact and sensitivity analysis).

Working plan for new candidates

Open consultations

European Commission

Market surveillance

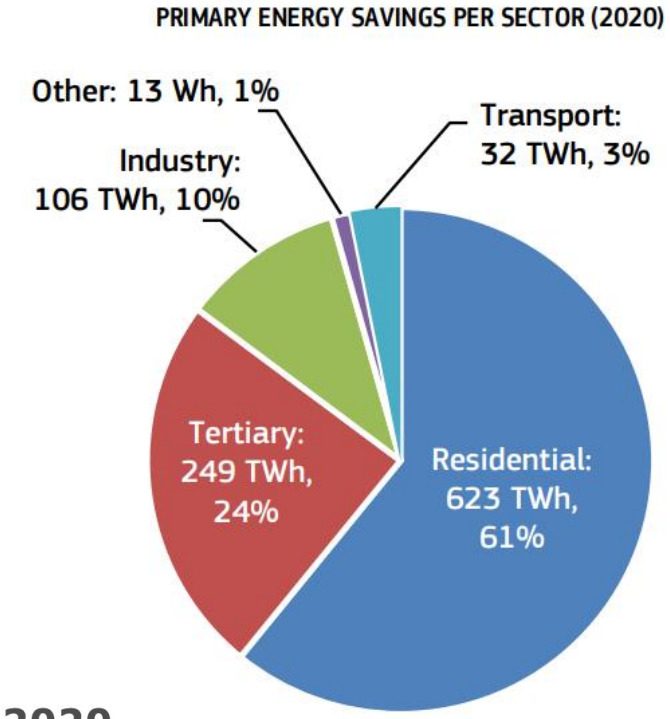
- **Incentive for manufacturers to comply**
- **Level playing field for industry**
- **Allows the energy savings to materialise**

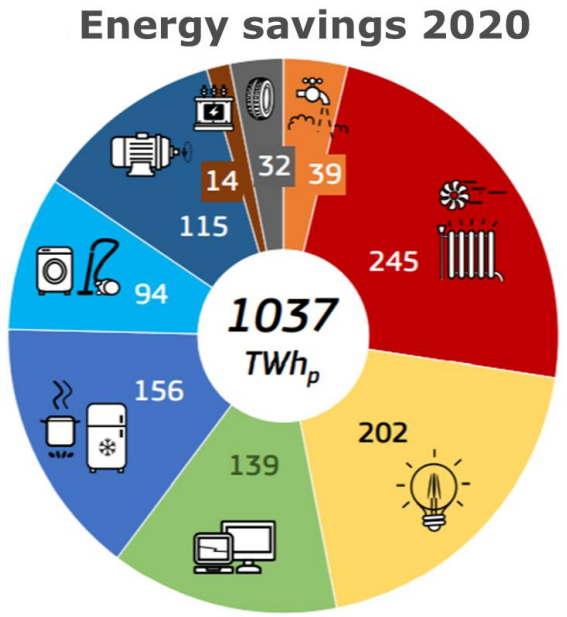
How ?

- **Member States are responsible** & must designate Market Surveillance Authorities (MSAs).
- **Horizontal legislation** on market surveillance (EU) 2019/1020 (GROW CdF)
- Manufacturers issue **Declaration of Conformity + "CE marking" + technical documentation** proving compliance (alternatives exist e.g. 3rd party certif.)
- Compliance verified by MSAs through random, ex-post checks: sampling in shops, borders checks, ordering on line, web crawlers, documentation checks, products testing in laboratory, etc.
- **EU support**: Overall coordination and support from COM via different fora, joint actions, IT tools (EPREL, ICSMS), guidance etc…

Impact

- 7% of the total EU27 primary energy consumption, increase to 10%/year from 2030
- the average EU27 household saved 1000 kWh/a of electricity, projected to grow in 2030 to 1200 kWh/a.
    - = 27% (2020) and 33% (2030) of the total annual electricity consumption of the average household
- the total expense savings in 2020 are between 210 and 300 euros per household. (projected to increase to between 350 and 580 euros per household in 2030).
- In 2020 the additional business revenue due to Ecodesign and Energy Labelling measures is 21 billion euros and this can increase to 29 billion euros by 2030. The related jobs increase by 324 thousand in 2020 to 430 thousand in 2030.

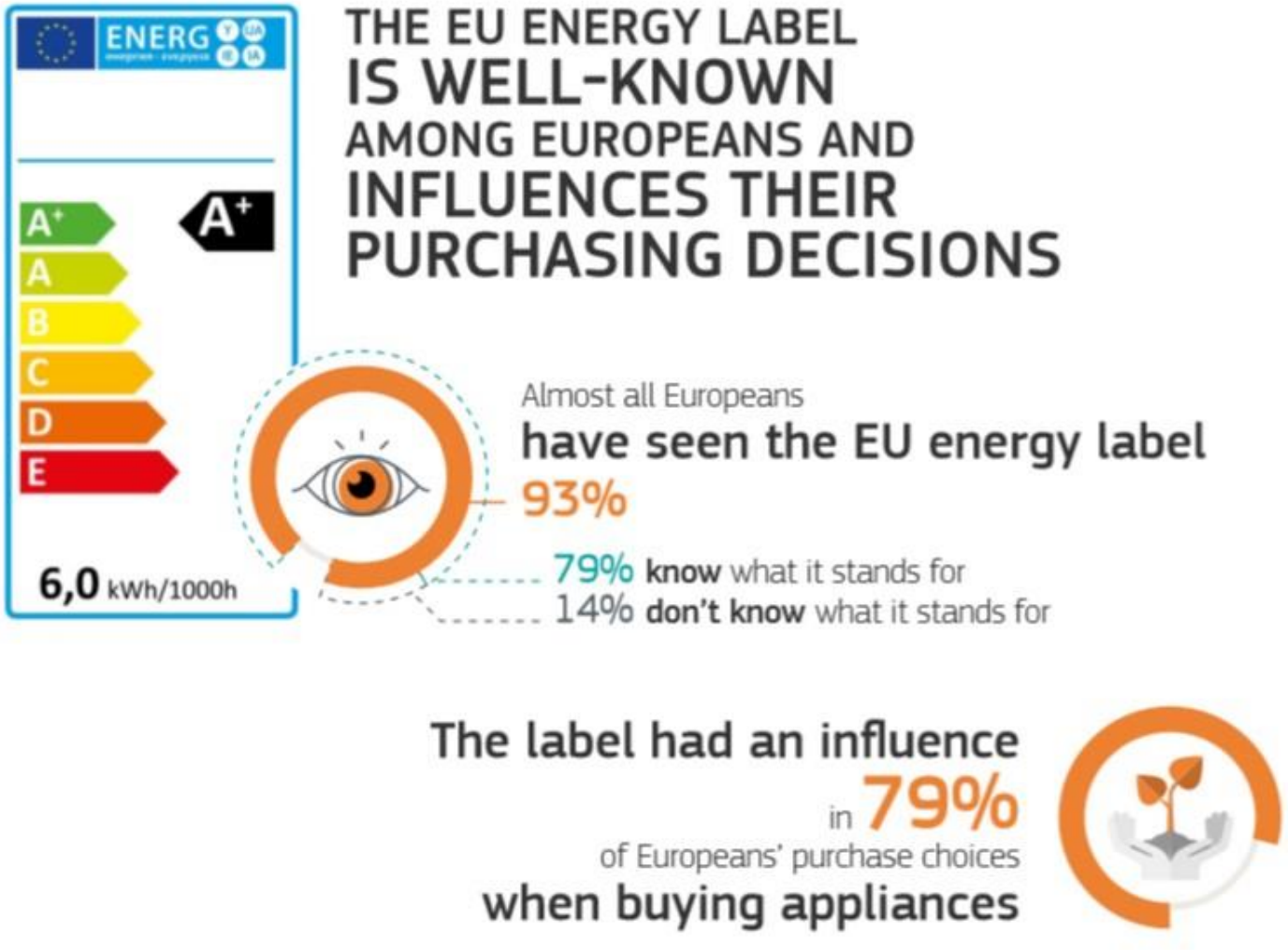




Sources:
Ecodesign Impact Accounting Report 2020: https://ec.europa.eu/info/news/ecodesign-and-energy-labelling-key-tools-reducing-consumers-energy-bills-and-eu-use-fossil-fuels-2021-dec-08_en
Working Plan 2022-24: https://energy.ec.europa.eu/ecodesign-and-energy-labelling-working-plan-2022-2024_en

European Commission

Almost the most known EU symbol



Source: Eurobarometer 2019

European Commission

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EUTube

EU Spotify

European Commission

Thank you

European Commission

sanedi
South African National Energy Development Institute.

ENERGY EFFICIENCY POLICY PACKAGE FOR APPLIANCES IN SOUTH AFRICA

International Energy Agency Training for Sub-Saharan Region
22 November 2022
11:00-13:00 (SAST)
Zoom Online Platform

International Energy Agency

ENERGY INNOVATION FOR LIFE

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- SA EE Strategy
- About SANEDI
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- EE Labeling
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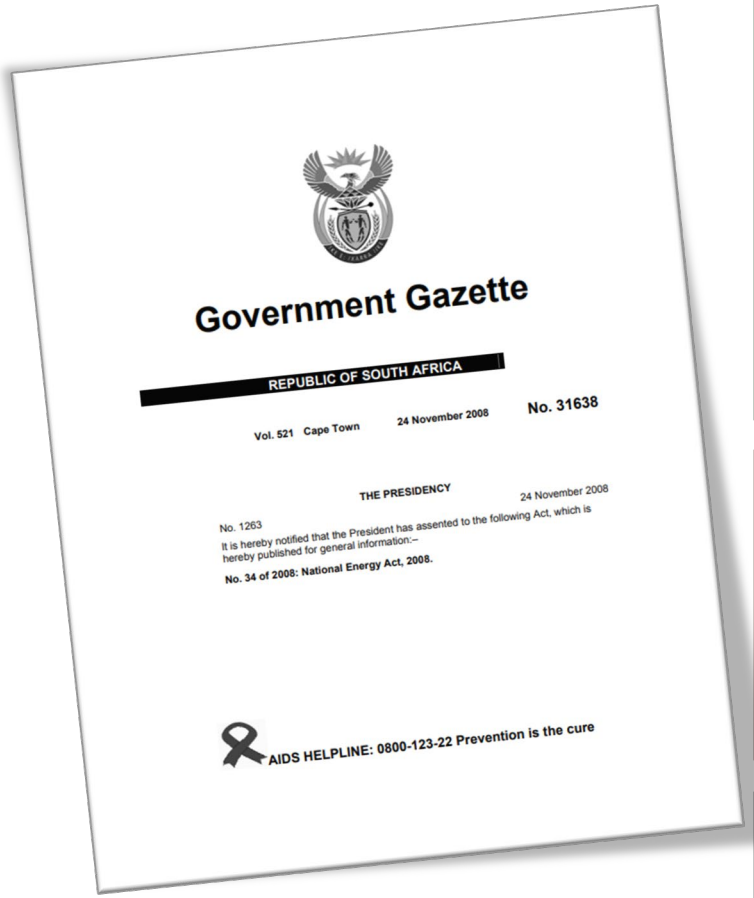
- EE & the environment
- Monitoring & evaluation
- Key Learnings & recommendations

ENERGY EFFICIENCY STRATEGY IN SA

- NEES established in 2005 by the DMRE
- In 2014, the Energy Efficiency Target Monitoring System (EETMS) was established to monitor the progress made towards meeting these targets
- New target from Post 2015 NEES include:
- A 50% reduction in energy intensity in the public sector;
- A 20% reduction in the energy intensity of municipal service provision and a 30% reduction in the fossil fuel intensity of municipality vehicle fleets;
- A 20% improvement in average energy performance of residential buildings;
- A 37% reduction in specific energy consumption in the commercial sector; and
- A 16% reduction in weighted mean specific energy consumption in the manufacturing sector.

About SANEDI



Government Gazette

REPUBLIC OF SOUTH AFRICA

Vol. 521 Cape Town 24 November 2008 No. 31638

THE PRESIDENCY 24 November 2008

No. 1263
It is hereby notified that the President has assented to the following Act, which is hereby published for general information:–

No. 34 of 2008: National Energy Act, 2008.

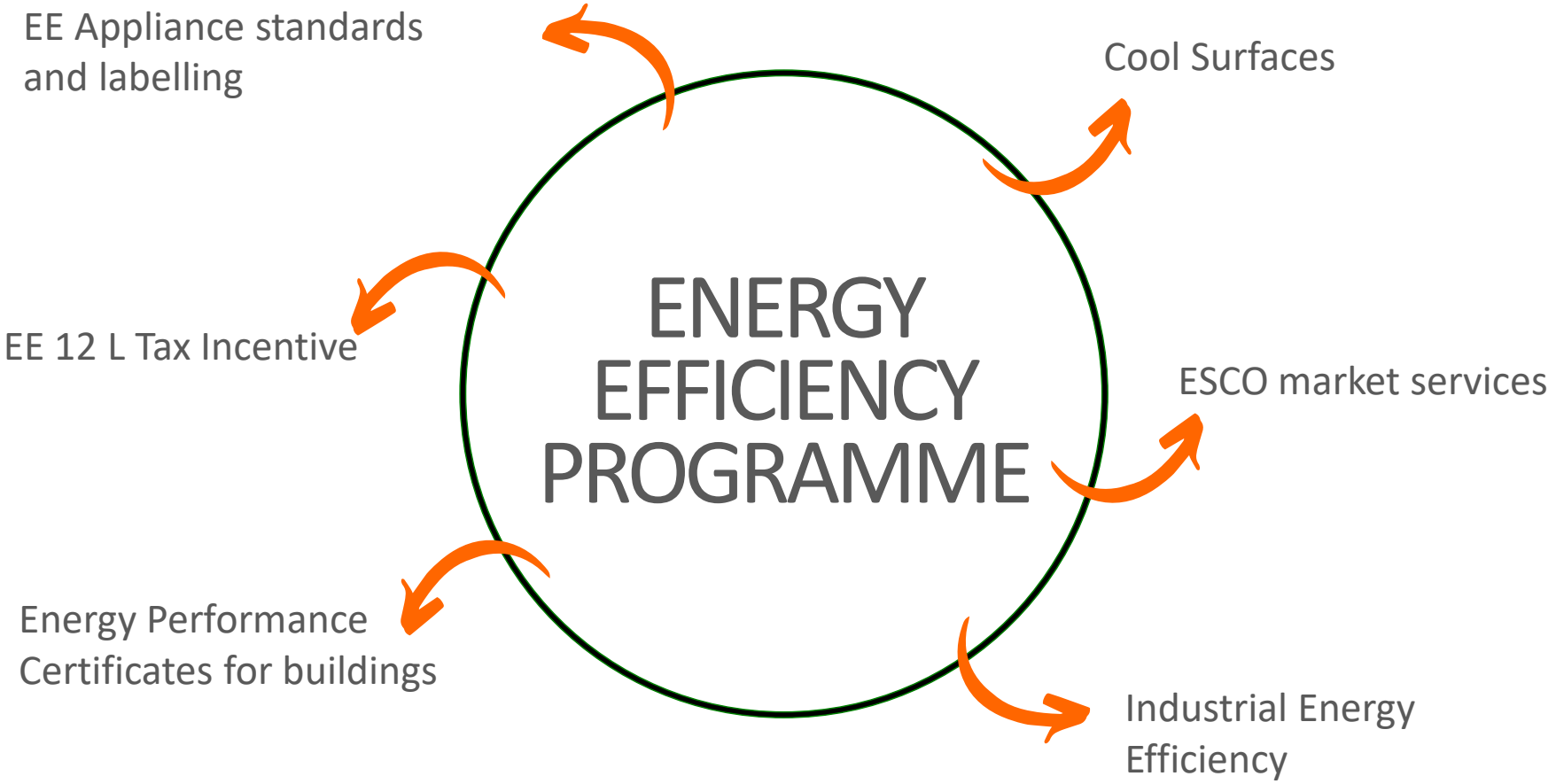
AIDS HELPLINE: 0800-123-22 Prevention is the cure

The National Energy Act, No. 34 of 2008 established the South African National Energy Development Institute (SANEDI) by transferring all the personnel, assets and liabilities of the South African National Energy Research Institute (SANERI), also a wholly owned subsidiary of CEF, and the National Energy Efficiency Agency (NEEA), to SANEDI.

The National Energy Act, 2008 (Act No. 34 of 2008), Section 7 (2) provides for SANEDI to direct, monitor and conduct energy research and development as well as undertake measures to promote energy efficiency throughout the economy.

The overarching purpose of SANEDI is to assist the Department of Energy in fulfilling its energy mandate and transition towards a sustainable, low carbon energy future.

ABOUT SANEDI



S&L PROGRAMME SUMMARY

The Appliance Standards and Labelling Programme, implemented by SANEDI, is a priority initiative of the Department of Mineral Resources and Energy (DMRE) to achieve energy consumption and cost savings as well as the reduction of Green-House-Gas from appliances and lighting products in South Africa. The Programme exists to support key government entities invested in regulating the safety and performance of appliances in accordance with developments in international, regional and national energy efficiency standards.

S&L PROGRAMME SUMMARY

The big 5:

1. Policy and regulatory framework
2. Energy efficiency labeling of household appliances and lighting products
3. Support for safety and performance lab testing of products
4. Support for Monitoring and Verification Activities
5. Communication and awareness creation

PROGRAMME SUSTAINABILITY

12 years strong

2010

inception of GEF-funded UNDP Project

2020

Close out of GEF-funded UNDP Project, DMRE mandates SANEDI to implement EE projects- incl. S&L

2020-2025

CLASP and SANEDI sign MoU for support to expand S&L scope

2021

Co- Implementation Framework Agreement between DMRE, DTIC, NRCS & SABS

2022 & beyond

CLASP and SANEDI secure additional funding for emerging Programme activities

Key Stakeholders & Mobilizers

EACREEE
Building a Sustainable Energy Future
East African Centre of Excellence for Renewable Energy and Efficiency

SACREEE
SADC CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY

Lawrence Berkeley National Laboratory

IEC

IEA
International Energy Agency

DBSA
Development Bank of Southern Africa

SADC

EW SETA

AFRICAN DEVELOPMENT BANK GROUP

Additional key government stakeholders:

the dtic
Department: Trade, Industry and Competition
REPUBLIC OF SOUTH AFRICA

SABS

NRCS

environment, forestry & fisheries
Department: Environment, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

water & sanitation
Department: Water and Sanitation
REPUBLIC OF SOUTH AFRICA

public works & infrastructure
Department: Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

Programme Management:

sanedi
South African National Energy Development Institute

Programme custodian:

mineral resources & energy
Department: Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

Programme sponsors:

clasp

UNDP

Your logo here

Eskom

SOUTH AFRICAN LOCAL GOVERNMENT ASSOCIATION
SALGA
Inspiring service delivery

CSIR
our future through science

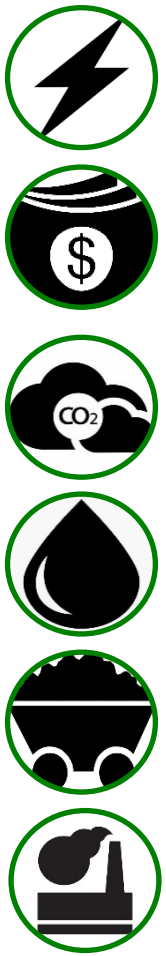
saee
Southern African Energy Efficiency CONFEDERATION
Local Chapter of AEE

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

WATER RESEARCH COMMISSION

ENTERPRISES
University of Pretoria

INCENTIVES (BENEFITS)



2030	2040
6.0 TWh of annual electricity savings	9.6 TWh of annual electricity savings
15.1 billion rand annual energy bill savings, representing an average annual bill saving of 653 rand per household	24 billion rand of annual energy bill savings, representing an average bill saving of 978 rand per household
Reduction of 3.7 million tons of CO2 emissions	Reduction of 5.8 million tons of CO2 emissions
Water savings of 6.5 billion litres	Water savings of 8.3 billion litres
Reduction of 2.5 million tons of coal burned	Reduction of 3.2 million tons of coal burned
Avoiding emissions of the following atmospheric pollutants: -4 kt particulate -4.3 Mt of SOx emissions -23 kt of NOx emissions	Avoiding emissions of the following atmospheric pollutants: -6 kt particulate -5.0 Mt of SOx emissions -25 kt of NOx emissions

Source: Lawrence Berkeley Laboratory

MINIMUM ENERGY PERFORMANCE STANDARDS

MEPS introduced for appliances (VC 9008), geysers (VC 9006) & general service lamps VC 9109 pending)

Dishwashers

0.3 million p/a

Washer-Dryers

< 0.1 million p/a

Washing Machines

0.5 million p/a

Tumble Dryers

<0.1 million p/a

Electric Ovens

0.6 million p/a

Fridges and Freezers

FF 1.3 million p/a
F 0.3 million p/a

Water Heaters

0.5 million p/a

Air Conditioners

0.3 million p/a

Lights Bulbs

Audio-Visual Equipment

1.5 million p/a

Source: Dr. Theo Covary

EE lighting activities to support LED growth

- Collaboration with the South African-German Energy Partnership implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to compile a report on the state of research regarding energy efficient lighting in South Africa. The report is intended to showcase South Africa's energy efficient lighting researchers and research themes and to highlight possible opportunities for collaboration on strategically aligned priorities.
- Installation of LED Efficient Lighting at Sibonile Primary School for the Visually Impaired
- New regulations for General Service Lamps- VC 9109 and VC9110.
- Capacitation of the South African Bureau of standards- Lighting technology lab to enable the testing of LED lighting products
- CLASP collaboration for the development of Minimum Energy Performance Standards for Street lighting luminaires in favour of higher efficiency LEDs
- Partnership with the Clean Lighting Coalition (CLiC)- Minamata Convention

Expansion of S&L IN SA

overall objective of the collaboration between CLASP and SANEDI is to protect South Africa's market from poor quality, inefficient products and to reduce CO2 emissions associated with energy related products in a cost-effective manner

OBJECTIVE:

Techno-economic study to inform the cost of implementing Minimum Energy Performance Standards for Electric Motors (0.7-375kW) in South Africa.

Market study recommendations successfully adopted By the DMRE, stakeholder consultation underway, regulations for adoption drafted for gazette

OBJECTIVE:

Recommended Minimum Energy Performance Standards for Electronic Displays (Televisions) beyond standby mode

Project in progress, latest industry briefing hosted on 28 October 2022 to present preliminary results of CBA to inform policy recommendations

OBJECTIVE:

Key analyses to inform the process of developing and improving standards for taps and showerheads. 2 reports completed

SABS standard drafting process underway,

WELS proposed to DWS for implementation by 2025, in accordance with their National Water Plan

OBJECTIVE:

Recommended Minimum Energy Performance Standard for street lighting luminaires.

CBA and Sensitivity Analysis being finalised, preliminary findings and draft recommendations to be presented in nation-wide stakeholder briefing on 2 December 2022

SA ENERGY EFFICIENCY LABEL

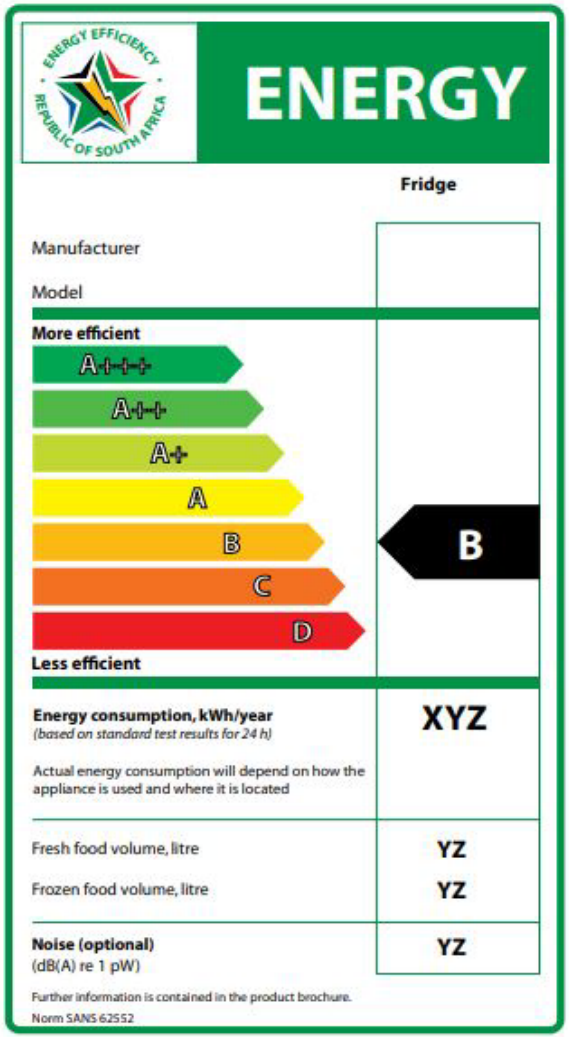
SA Energy Efficiency logo

Energy grading scale:

Colour-coded grading scale showing the top (in this case an A+++) and bottom (in this case a D) grading for this appliance type.

Additional information:

Additional information for this appliance.



Product identification:

- Type of appliance
- Manufacturer
- Model

Appliance rating:

The black arrow indicates the rating achieved by the specific appliance.

Indicative energy use:

Energy consumption by this appliance under standard operating conditions.

COMUNICATION & AWARENESS

To assist consumers in understanding how much energy the appliances they consider buying will use, the Appliance Energy Calculator app has been developed. The app is designed to give consumers an estimation of the running costs of various appliances using the information supplied on the South African Energy Label attached to the product in-store. Download the free 'appliance energy calculator' app on google play

OBJECTIVE:

Guiding publication as a manual for government officials and industry members implementing and complying to product standards respectively. The guide aims to provide an overview of energy efficiency standards and labelling compliance in South Africa across various product categories. Aspects of standards and labelling development, enforcement, monitoring and maintenance will all be included

ENERGY EFFICIENCY & THE ENVIRONMENT

- In 2020 the DMRE commissioned a study aimed at determining the feasibility of an integrated appliance recycling system in South Africa

- The need for the study arose out of the need for the energy efficiency S&L Project to be implemented in the context of environmentally sustainable principles

- Problem:
  - Materials manufacturing- large industry represented by the Energy Intensive Users Group (EIUG)
  - Energy-inefficient appliances remain in operation for extended periods
  - People in lower income groups incur higher electricity bills
  - No evidence of environmentally sound and safe disposal
  - Discarded appliances = high volumes of electric and electronic waste
  - Incorrect handling and treatment = adverse health and environmental consequences
  - In South Africa, WEEE is the fastest growing waste stream
  - WEEE is often burnt to recover precious and semi-precious metals
  - Increased air, soil and water pollution
  - Contributes to landfill disposal

MONITORING & EVALUATION

- Invisibility of EE impacts compared to easily observable impacts of adding new energy supply
- Major barrier to implementation and expansion of MEPS and labelling in developing countries tends to be policy makers' limited confidence in the effectiveness of S&L
- SANEDI & the NRCS have collaborated with CLASP, using MEPSY to evaluate the impact of the S&L Programme using the data collected from the NRCS LoA application process.

KEY LEARNINGS AND RECOMMENDATIONS

- Energy efficiency policy integrates policy custodians and sectors that usually operate in silos
- Stakeholder buy-in before MEPS project commencement is key to successful implementation
- Continuous investment for state testing laboratory upgrades is crucial to ensure success of an S&L programme
- Market shifts and trends such as the growth of e-commerce (online labelling) requires flexible S&L strategies so that programmes can remain relevant in a rapidly changing and advancing market
- Appliance recycling is a key part of the value chain, as we push for the replacement of inefficient appliances- a strong reuse/recycling compliance model with supporting norms and standards needs to be in place to mitigate the risk of overbearing second-hand (inefficient) appliance markets.
- Regular Evaluation of S&L Programmes allow for effective quantifying of impacts and review of policy packages for this sector.

sanedi
South African National Energy Development Institute.

THANK YOU

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Website: http://savingenergy.org.za/

ENERGY INNOVATION FOR LIFE