



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: **NEW ELECTRICAL APPLIANCES**

Commercial Refrigeration Industry Stakeholder workshops

5 April 2019

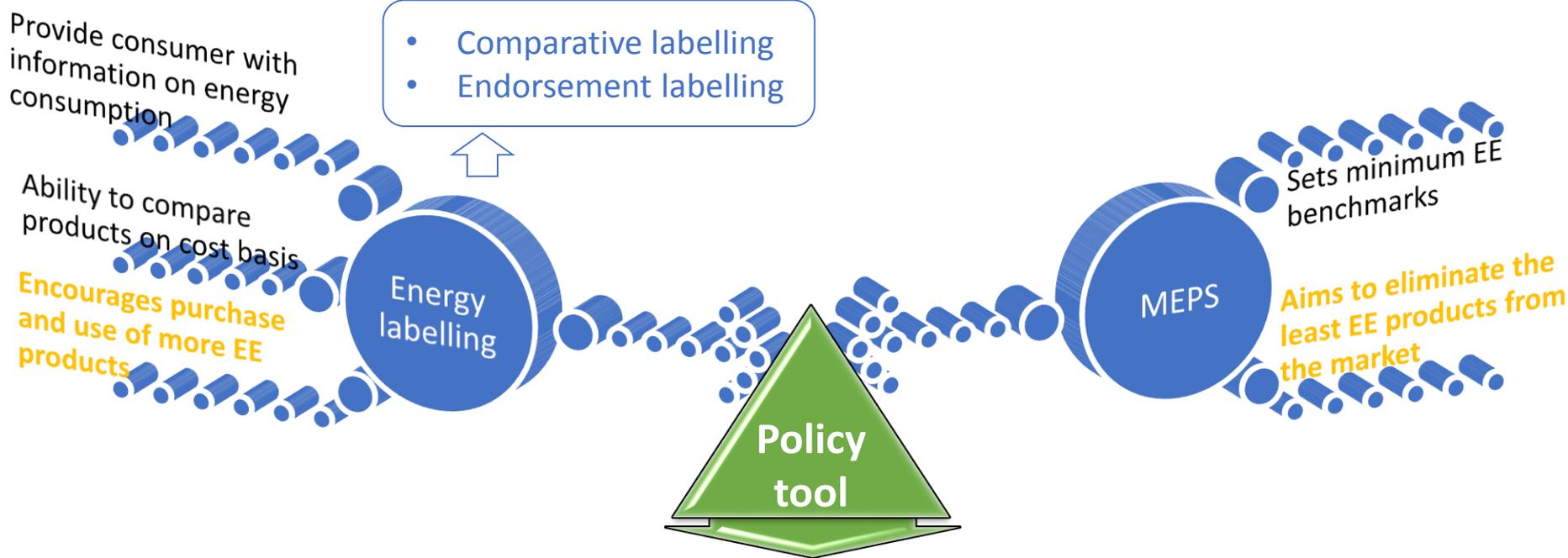


# Agenda

1. Policy tools considered
2. Scope of work and boundaries
3. Screening process
4. Methodology
5. International MEPS trends
6. SA analysis
7. Recommendations
8. Open discussion

# 1. Policy tools considered

# Energy labelling and MEPS



Energy efficiency and climate change mitigation

# Policy options to improve energy efficiency

- Two main policy options considered are energy labelling and Minimum Energy Performance Standards (MEPS)
- These are typically enacted through government legislation and regulations
- When is labelling most effective?
  - When consumers purchase products and pay the energy bills
  - When products are on display at purchase and can be compared
  - Where there is a wide range of energy efficiency on the market
- Labelling creates *market pull* to encourage suppliers to offer more efficient products to the market

# Policy options to improve energy efficiency

- When is MEPS most effective?
  - When product purchasers do not pay energy bills (can be different parts of a company, landlord and tenant)
  - When products are not on display for sale (purchased on specifications or from catalogues)
  - When there is a significant range of efficiency available (internationally) but this is not always present on the local market
- MEPS is a *market push* to ensure that all products offered for sale meet a minimum efficiency level

## 2. Scope of work and boundaries

# Study objectives (as per TOR)

1. To identify a new set of electrical equipment (residential or commercial) to which compulsory minimum energy efficiency MEPS and/or labelling could be introduced
2. To recommend timelines for implementation of improved and new minimum energy performance levels for the next set of electrical equipment
3. To conduct an impact assessment analysis of the proposed mandatory requirements for each appliance on consumers, retailers, South African manufacturers, and importers
4. To quantify the potential energy and greenhouse gas emission savings that could be achieved through new MEPS and/or labelling over a 10 and 30-year period

# Project Scope (UNDP and DOE)

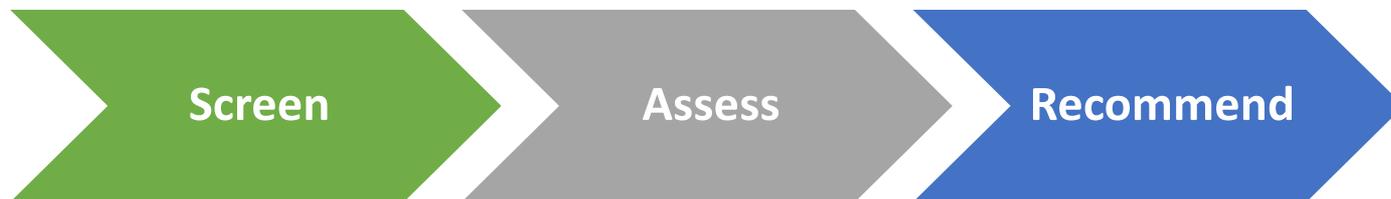
## 1. Purpose:

- Identify new electrical appliances that could be considered for a Standards & Labelling Programme

## 2. Key considerations:

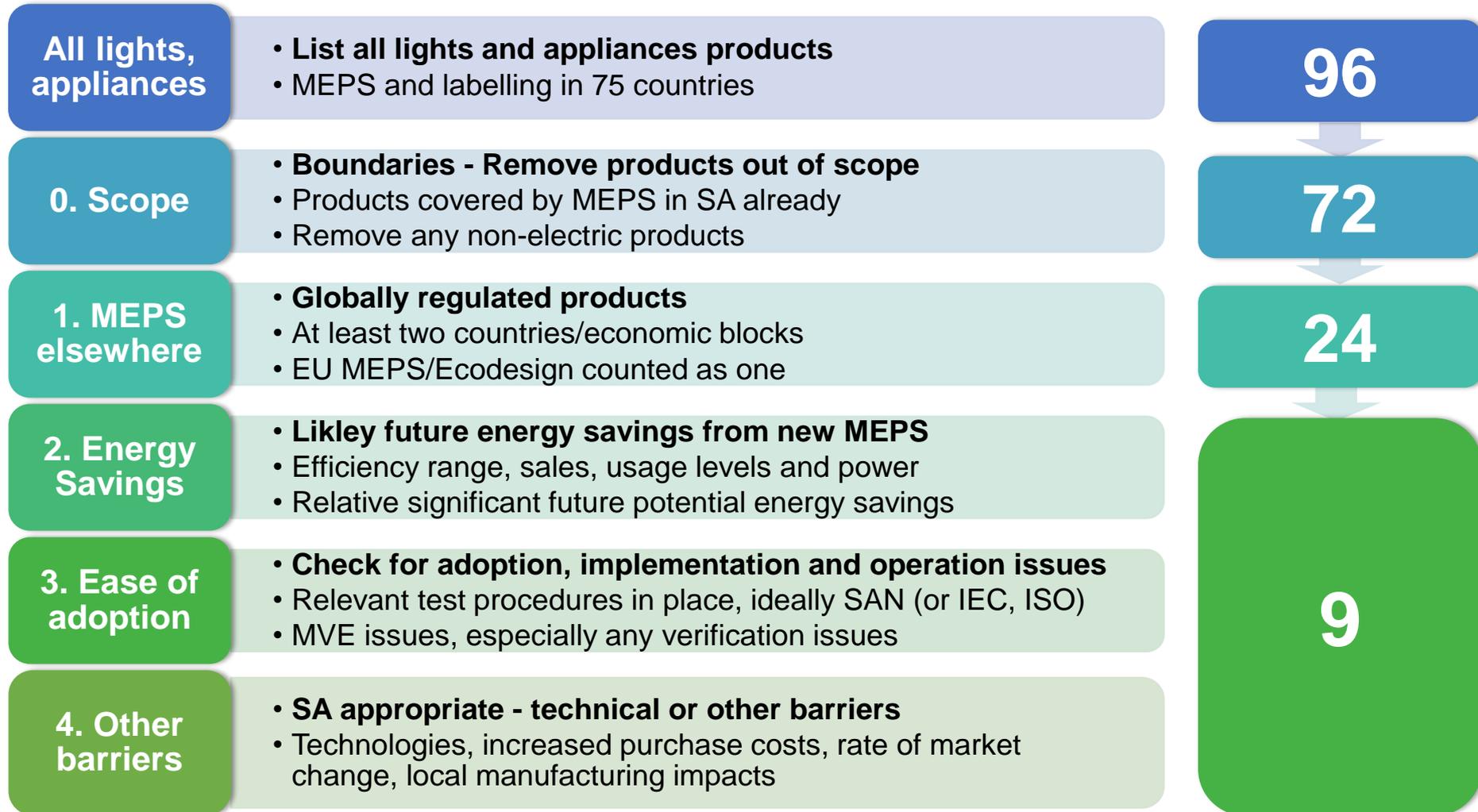
- 4-10 products (residential and commercial)
- Must include distribution transformers
- Main goal – reduce electricity usage and GHG emissions

## 3. Approach:



# 3. Screening

# Screening process



# Shortlisted electric equipment



Heating and  
cooling equipment

Chiller systems



Household  
appliances

None



Office equipment  
and electronics

Computers  
Televisions  
External Power Supplies



Other equipment  
(mostly commercial  
and industrial)

Motors - 3 Phase  
Pool Pumps  
Refrigerators – Commercial  
Distribution Transformers

*Note: Large ACs (>7.1kW) to be covered in a separate study*

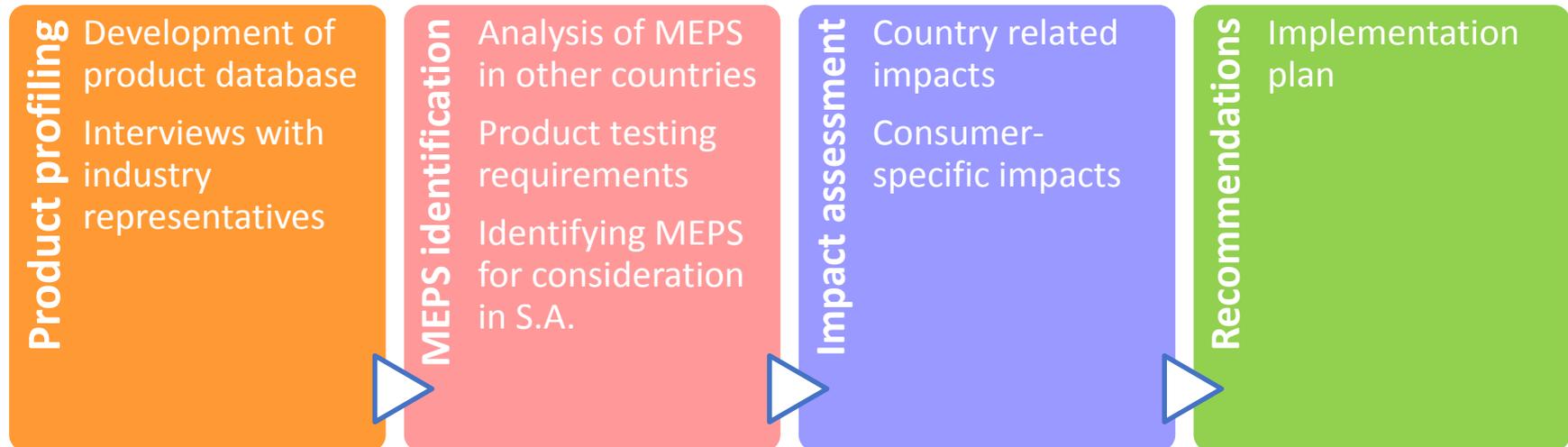
# 4. Methodology

# Methodology

## 1. Data sources:

- In-house developed database of electric appliances (web crawling, brochures, etc.)
- Interviews with the industry representatives

## 2. Approach:





# 5. International MEPS trends

# Product overview – commercial refrigeration

- Large range of possible products
- Storage of food – frozen and unfrozen
- Proposed **scope**:
  - **refrigerated display cabinets** (retailers) - accessed by shoppers
  - **professional refrigerated storage cabinets** (restaurants, institutions etc.) – NOT accessed by shoppers
- ISO test methods published or in advanced preparation (EN standards exist)

# International Review of MEPS

- Most comprehensive and transparent MEPS has been developed by Europe
- Professional refrigerated storage cabinets – MEPS published in Europe
- Refrigerated display cabinets – draft MEPS only (2014) for Europe – final in preparation (2018?)
- Australia and New Zealand are aligning with Europe (including draft levels)
- US has MEPS levels but more than 50 types of product, different (US only) test method, all imperial units (not recommended)

# 5. Analysis

# Market Overview

- At least 13 brands available
- Some brands conform to overseas MEPS
- Ranges:
  - Net capacity range: 21L – 3 500L
  - Power consumption range: 130W – 6.7kW
- Local manufacturers/assemblers dominate but importers are also present
  - Local manufacturers importing key components – compressors
- 96 000 – 120 000 units sold per annum

# Impact Analysis – Cost Implications

- Local manufactures reluctant – impact on bottom line
- There are cost implications in introducing MEPS
- Other factors e.g. brand name and size are also key price determinants

<b>Brand (Model)</b>	Liebherr (FKVSL4113)	FridgeStar (EH365)
<b>Description</b>	Premium Beverage Fridge	1 Swing Door Beverage Cooler
<b>Capacity</b>	388L	334L
<b>Energy consumption (24hrs)</b>	1.27kWh	2.61kWh
<b>Rating</b>	-	B
<b>Price</b>	R23 990	R7 732

# 7. Recommendations

Celebrate **Development** Diversity

# Recommendations for commercial refrigerators

- **Recommend alignment with Europe following EU Tiers by 5 years**
  - Refrigerated storage cabinets
    - MEPS Tier 1 in 2020 : EEI < 115
    - MEPS Tier 2 in 2022: EEI < 95
  - Refrigerated display cabinets
    - MEPS Tier 1 in 2021: EEI < 150
    - MEPS Tier 2 in 2023: EEI < 130
- **Test method - ISO 23953.1 and ISO 23953.2**

# 8. Discussion



# Thank you

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