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

External Power Supplies (EPS) Stakeholder Workshop

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Energy Efficient Strategies

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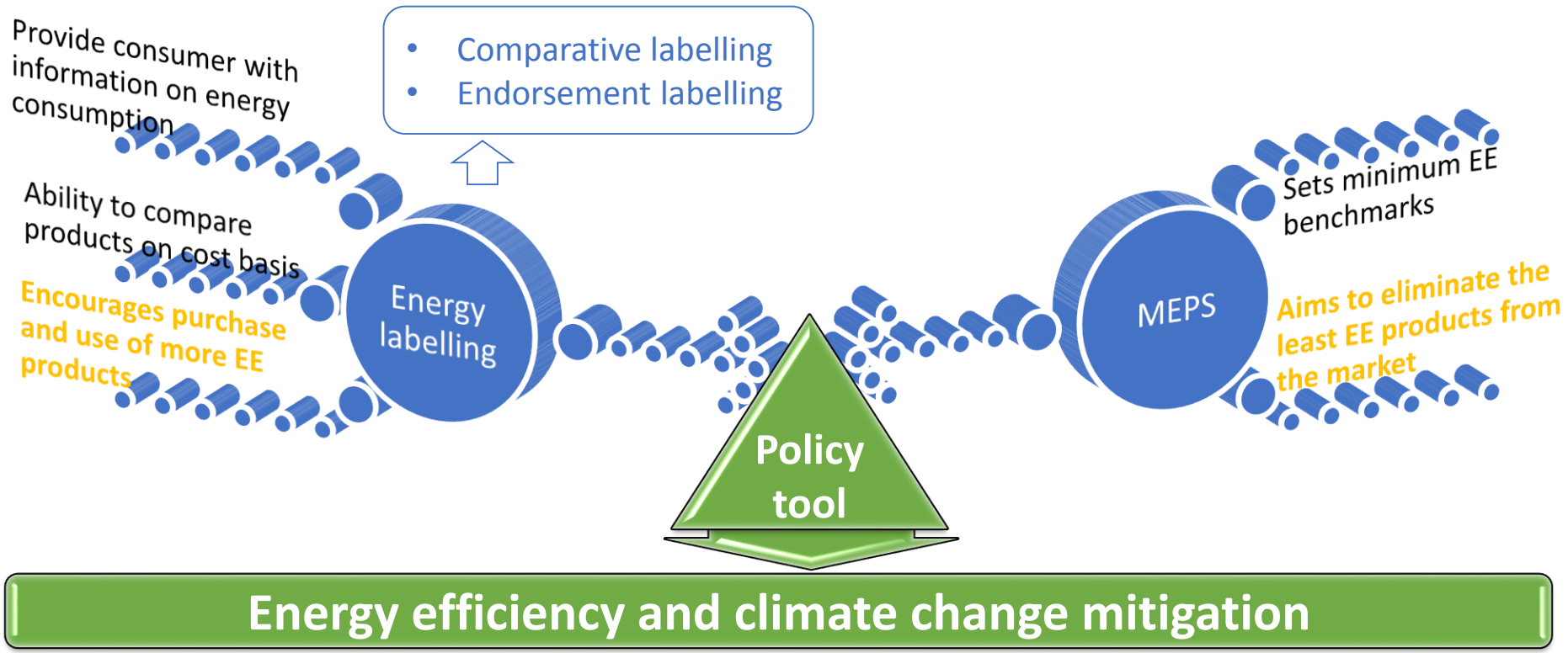
Agenda

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



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

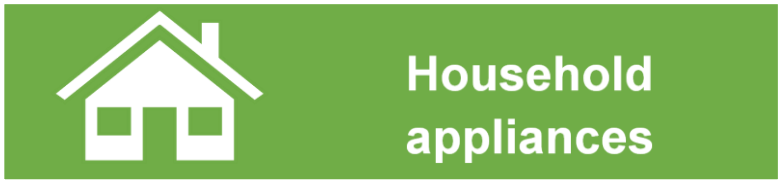
Screening process

All lights, appliances	• **List all lights and appliances products** • MEPS and labelling in 75 countries	**96**
0. Scope	• **Boundaries - Remove products out of scope** • Products covered by MEPS in SA already • Remove any non-electric products	**72**
1. MEPS elsewhere	• **Globally regulated products** • At least two countries/economic blocks • EU MEPS/Ecodesign counted as one	**24**
2. Energy Savings	• **Likley future energy savings from new MEPS** • Efficiency range, sales, usage levels and power • Relative significant future potential energy savings	**9**
3. Ease of adoption	• **Check for adoption, implementation and operation issues** • Relevant test procedures in place, ideally SAN (or IEC, ISO) • MVE issues, especially any verification issues	
4. Other barriers	• **SA appropriate - technical or other barriers** • Technologies, increased purchase costs, rate of market change, local manufacturing impacts	

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)

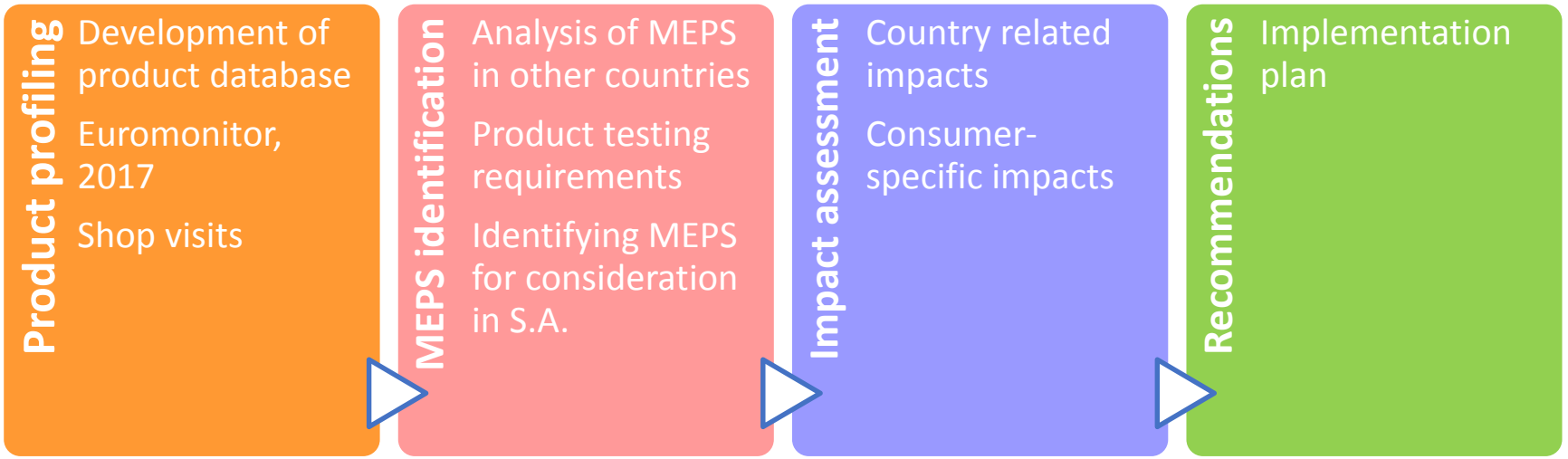
Motors - 3 Phase
Pool Pumps
Refrigerators – Commercial
Distribution Transformers

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.)
   - Euromonitor, 2017
   - Shop visits
2. Approach:



Data sources

- Field data collection
  - Online shops
  - Shop visits
  - User survey: 64 participants
- International sales databases
  - Euromonitor, 2017
- Only one international MEPS program for EPS globally

5. International MEPS trends

International Review of MEPS for EPS

- Only a single global test procedure – US Department of Energy is the caretaker
- Single set of global efficiency metrics Level II to Level VI – US Department of Energy
- MEPS in force using this scheme in many countries including USA, Canada, China, Japan, Europe, Australia and New Zealand
- Level selected and timing varies by country

6. Analysis

Product overview

- External power supplies (EPS:
  - Small intermediate devices that convert mains power to extra low voltage (ELV) output (less than 50 V)
  - Found everywhere: office and IT equipment, toys, household devices, commercial sector devices and communications equipment
- Scope boundaries:
  - **Covered**: EPS with adjustable output voltage
  - **Not covered: p**ower supplies with several simultaneous outputs of different voltages (e.g. power supplies for desktop computers)
- Annual production and sales: >1 billion units

Market Overview

- OEM branded and aftermarket EPSs available
- Proxy - sales of portable computers, tablets & portable consumer products (Euromonitor, 2017):
  - 2017 sales: 18.7m units
  - 2022 sales: 23.1m units
- No local manufacturing activities identified

Impact analysis

- Local SA market has already transitioned towards the use of efficient EPS products
  - A random scan of 64 EPS products on the local market showed:
    - 55% Level V products
    - 39% Level VI products
    - 6% unrated products
  - EPS efficiency levels are not likely to be a significant determining factor of EPS prices

7. Recommendations

Recommendations

- **Level V in 2020**
  - Level V will mean that South Africa will be aligned with Europe
- **If Europe moves to Level VI, South Africa to consider following shortly afterwards**
  - Adopting Level VI aligns the country with USA
  - Would result in significant savings

8. Discussion and questions?

Thank you

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