Overview of International Best Practices on Policy Interventions

EELA Webinar Series: Enabling policies for a market transformation towards EELA

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29 September 2020
Why appliances?

- Appliances improve our quality of life through the services they make possible:
  - Cooling
  - Lighting
  - Entertainment/access to information
  - Cleaning
  - Heating

- **Energy efficiency** enables you to enjoy the **same services** while using **less electricity**.
Benefits of energy efficient products

- **Household savings** - reduce household energy bills (but still enjoy the same services);

- **Grid reliability** – improved service quality; reduce electricity shortages (brown-outs / black-outs) due to reduced peak power demand;

- **Save national investment** – reduce capital and loans tied up in power stations and grid upgrades;

- **Market protection** - avoid becoming dumping-ground for technologies banned elsewhere due to efficiency regulations/requirements;

- **Increased productivity & positive economic impact** – increased industrial investment and employment;

- **Climate change** – develop on a ‘soft energy path’, avoid becoming a high CO₂ emission country.
Attributes of a policy intervention

- **Significant outcomes**
  - Achievable, ambitious and futuristic

- **Complementary**
  - Understand what is existing; nationally, regionally and internationally
Policy Interventions for Market Transformation

• **Energy & Quality Standards**: Push the market toward high-quality, high-efficiency products; including MEPS and performance requirements.

• **Labeling & Buyer Education**: Labels communicate energy, performance, and quality to consumers & other buyers, inspiring demand for sustainability.

• **Incentives & Bulk Procurement**: accelerate market saturation of high-quality, high-efficiency products & reduce market risk. Encourage mass adoption.

• **Compliance, Testing & Quality Assurance**: Ensure products meet the standards and perform as promised and level the markets.

• **Global Collaboration & Knowledge Sharing**: Leverage cutting edge & collective knowledge and forge productive partnerships.
Lighting: Global Transition

- **Europe; transition**
  - Incandescent lamps, 2009 – 2012
  - Mains-voltage halogen spot lamps in 2016
  - Non-directional halogen lamps in 2018
  - Compact Fluorescent Lamps in 2021
  - Linear Fluorescent T12 in 2021; T8 in 2023
  - Moving towards an all-LED market

- **Other countries that have phased out incandescent bulbs**
  - Argentina, Australia, China, Cuba, Ecuador, South Africa, Uganda, Vietnam, USA, Zambia, Zimbabwe (and many more…)

- **Ongoing work**
  - UN Environment U4E working in over 10 countries
  - Eight SICA countries developing MEPS on lighting
Payback period on general lighting in South Africa is short and R125 savings from LED compared to equivalent CFL

![Image of light bulbs](Image)

**International Best Practices on Policy Interventions**

<table>
<thead>
<tr>
<th>Item</th>
<th>Halogen</th>
<th>CFL</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life</td>
<td>2000 hrs (2 yrs)</td>
<td>6000 hrs (6 yrs)</td>
<td>15000 hrs (15 yrs)</td>
</tr>
<tr>
<td>Power</td>
<td>60 W</td>
<td>15 W</td>
<td>8 W</td>
</tr>
<tr>
<td>Use (3hr/day)*</td>
<td>65.7 kWh/yr</td>
<td>16.4 kWh/yr</td>
<td>8.8 kWh/yr</td>
</tr>
<tr>
<td>Elec cost.*</td>
<td>R 82.1/yr</td>
<td>R 20.5/yr</td>
<td>R 11.0/yr</td>
</tr>
<tr>
<td>10-year cost</td>
<td>R 953.2</td>
<td>R 265.3</td>
<td>R 139.5</td>
</tr>
<tr>
<td>Payback period</td>
<td>7 weeks</td>
<td>6 weeks</td>
<td></td>
</tr>
</tbody>
</table>

* Lamp prices from Pick n Pay in Rosebank, 26 Oct 2018. All regular prices, no special offers or discounts. Usage assumptions are: 3 hours/day, 365 days/year. Electricity is R 1.25/kWh.
## Air Conditioners (ACs) – A Dumping Study

<table>
<thead>
<tr>
<th>Country</th>
<th>Minimum Energy Performance Standards (MEPS)</th>
<th>Split RAC MEPS Level (if applicable)</th>
<th>Energy Labelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>None</td>
<td></td>
<td>PNA 16.537</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>None</td>
<td></td>
<td>Believed to have</td>
</tr>
<tr>
<td>Kenya</td>
<td>(Mandatory) KS 2463:2019 - Non-ducted air conditioners — testing and rating performance</td>
<td>EER 3.10 W/W</td>
<td>(Mandatory) KS 2463:2019</td>
</tr>
<tr>
<td>Morocco</td>
<td>(Mandatory)</td>
<td>EER 2.8 W/W</td>
<td>(Mandatory) NM 14.2.300 – 2012</td>
</tr>
<tr>
<td>Nigeria</td>
<td>(Voluntary) NIS: ECOSTAND 071-2:2017EE</td>
<td>EER 2.8W/W</td>
<td>(Voluntary) NIS: ECOSTAND 071-2:2017EE</td>
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<tr>
<td>South Africa</td>
<td>(Mandatory – Under review) SANS 941</td>
<td>EER 3.0 W/W (EU B-class)</td>
<td>(Mandatory) SANS 941</td>
</tr>
<tr>
<td>Tanzania</td>
<td>None</td>
<td></td>
<td>Believed to have</td>
</tr>
<tr>
<td>Tunisia</td>
<td>(Mandatory)</td>
<td>EER 3.0 W/W (EU B-class)</td>
<td>Mandatory</td>
</tr>
</tbody>
</table>
RAC MEPS Comparison

Current RAC Market vs. U4E Model MEPS

All RACs in Africa compared to local and international MEPS

- Imported RACs
- Locally Assembled RACs

- Max U4E Model MEPS for Africa (U4E Group 1 & Group 3 6A)
- Mid U4E Model MEPS (used for modeling)
- Min U4E Model MEPS for Africa (U4E Group 2 0B)
- China MEPS (Pre-2020)
- Kenya MEPS
- Egypt MEPS
- South Africa, Tunisia, and Ghana MEPS
- Nigeria and Morocco MEPS

*Ghana recently committed to revising MEPS to at least EER 3.0 W/W
Refrigerators, Advancing Efficiency Through MEPS

<table>
<thead>
<tr>
<th>MEPS</th>
<th>Jamaica* (pending) and USA*</th>
<th>Mexico (current)*</th>
<th>U4E</th>
<th>China</th>
<th>India*</th>
<th>Kenya</th>
<th>Brazil</th>
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<tr>
<td>Jamaica*</td>
<td>0.520 (377 kWh)</td>
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</tr>
<tr>
<td>Top Label Class</td>
<td>0.094 (66 kWh)</td>
<td>Energy Star: 0.467 (339 kWh)</td>
<td>N/A</td>
<td>0.236 (325 kWh)</td>
<td>0.477 (346 kWh)</td>
<td>0.276 (200 kWh)</td>
<td>0.307 (223 kWh)</td>
</tr>
</tbody>
</table>

* These countries do not use IEC test methods
Impact on Refrigerator Consumption

Electricity Consumption of 500L AV Combined Frost-Free Refrigerator

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Market Push and Pull

1. Minimum Energy Performance Standards

2. Energy Labels

3. Procurement, and other labels

Volume of products sold

Low

Energy efficiency

High

International Best Practices on Policy Interventions
Compliance for Market Transformation

**Regional compliance**
- **Key Elements**
  - Strengthened regional centers
  - Regional product registration centers
  - Regional testing capacity and MRAs

**National Compliance**
- **Key Elements**
  - Conformity assessment
  - Market surveillance
  - Enforcement/punitive measure
Thank you, any questions?

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