Appliance energy efficiency in South Africa:
Policy gaps and recommendations to address actor-specific barriers
Energy background

• ZA residential electricity consumption: 17.2% (2\textsuperscript{nd})
  – Peak loads often exceed supply (rolling power blackouts)
  – Electricity prices among the lowest in the world in 1995, but tariffs tripled 2008 – 2012
  – Economic crisis (2008), energy intensive sectors

• As every country: Specific barriers for EE
  → bigEE ZA analysis
Barriers in the appliance sector

Electricity prices

• Coal widely and cheaply available: >85% of electricity generation
  – Monopolistic structure of the energy utility: State-owned utility Eskom provides >90%

• Since 2009: Multi Year Price Determination (MYPD) to guarantee energy security
  → Significant price increase (>3x until 2012)
  → 2015: 10 EUR ct/kWh (consumers)
Barriers in the appliance sector

Institutional barriers

• Public sector
  – Lack of (programme) co-ordination, resources, skills
  – Voluntary measures: low impact
  – Policies not as effective as possible

• Commercial sector
  – Lack of interest / capacities for compliance
  – Misconceptions: EE will disrupt production...
Barriers in the appliance sector

Lack of financial incentives

• Investors / demand side:
  – Capital constrains, risk aversion (high upfront investments/ long payback period)

• Suppliers:
  – Risk: New EE solutions not meeting sufficient demand
Barriers in the appliance sector

Lack of EE awareness and (consumption) information

• People are unaware that EE potentials exist, not sufficiently informed about costs and benefits

Low priority of EE

• Emerging country: “meet population’s basic needs”
• BAU practices remain, low hanging fruits not realised

→ Strong arguments to address barriers with policies and measures
ZA has just begun to focus on EE: 2005 National Energy Efficiency Strategy (NEES) was implemented

Appliances S&L

- 2005/06, voluntary label (refrigerators): low impact
- 2008: South African Bureau of Standards (SABS)
  - SANS 941, but mandatory S&L delayed

- 2015 MEPS: refrigerators, washing machines, dryers, dishwashers, electric water heaters, ovens, A/C, HP
Policy gap analysis appliance sector

Financing programmes & incentives

• Energy Efficiency and Demand-Side Management

• Barriers at responsible utility Eskom:
  – Funding problems, lack of process transparency
  – EEDSM vs. revenues, Load shifting vs. load reduction

• Oct 2013: Successful EEDSM abandoned
  – Indirect successor: 12L tax initiative (RES/EE projects)
    but not attractive for companies
Policy gap analysis appliance sector

Information campaigns (also reduced)
• 49M Initiative (radio spots, newspaper articles)
• Eskom Power Alert (TV adverts)

Other policy challenges
• Carbon tax plan: Strong general opposition
• Missing programmes: E.g. public procurement

→ Overall: No comprehensive EE policy package yet
Policy recommendations

• **Strengthen**: Energy Efficiency in public sector

• **Address**: Doubts on EE, lack of motivation / capacities

• **Optimize**: Attractiveness & security of investments
  – Responsibilities, implementation & coherence of P&M

• **Close identified gaps**:
  – (Re-)establish / develop EEDSM
  – Complement missing or delayed P&M
  → S&L Case Study
Case study: Cold appliances

Effects of appliances S&L delay

• Example: Fridge/Freezers & Freezers
  – Popular categories, high penetration rates (>80%)
  – Operate 24/7, lifespan >10 years

• 1st product group of South African S&L
  – 10 years: Voluntary label → Mandatory (2015)
Case study: Cold appliances

- EE potential

**Fridge/Freezers:**

- Scenario A: BAU vs.
- Scenario B: BAT

→ Saving = 51%
**Case study: Cold appliances**

- **EE potential**

  **Freezers:**
  - Scenario A: BAU
  - Scenario B: BAT

  $\rightarrow$ Saving = 31%
Case study: Cold appliances

- Available EE classes: **Fridge / Freezers**

![Graph showing energy efficiency classes for fridges and freezers](image-url)

*Source: Own illustration based on Covary, T. (2015)*
Case study: Cold appliances

• Available EE classes: **Freezers**
Case study: Cold appliances

• Conclusions & recommendations:
  – MEPS obsolete: Revise asap to harness EE potentials
  – Promote BAT, Phase-out obsolete technology
  – Avoid policy delays and exemptions (lock-in effects)

• Effective M&V:
  – Compliance & data for MEPS revision
Your guide to energy efficiency in buildings.

Thank you for your attention!

Find more information:
- bigEE Country Page South Africa
- bigEE World-wide Guides
Recommended bigEE policy package

OVERALL POLICY PACKAGE for ENERGY EFFICIENCY in APPLIANCES

Governance Framework

- Targets and Planning
  - Policy roadmap and targets for very energy efficient appliances
  - Voluntary Agreements with commercial or public organisations
  - International co-operation

- Infrastructure and Funding
  - Energy agencies
  - Energy saving obligations for energy companies
  - Energy efficiency funds
  - Feed-in-tariff for certified energy savings
  - Government agencies and budget

- Eliminating distortions
  - Removal/reform of subsidies to end-user energy prices and on energy supply
  - Energy/CO₂ taxation and emission trading
  - Removal of legal barriers
  - Regulation of energy companies

Specific policies and measures for energy efficiency in appliances

- Regulation
- Transparency and Information
- Incentives and Financing
- Capacity building and Networking
- RD&D and BAT promotion
Policy gap analysis appliance sector

Financing programmes & incentives

• EEDSM umbrella programme
  – Eskom: financing support, recover by tariff revenues

• Sub-programmes (e.g.)
  – Standard product programme: pre-approved rebates (lighting, shower heads, A/C, HP, etc.)
  – Solar water heater (SWH) rebate programme
  – Residential Mass Rollout (RMR) / CFL programme
  – Standard Offer Programme (SOP) (50 kW to 5 MW)