

Savings potential from lighting and appliances and the role of policy and regulation

Workshop and Partner Meeting on Energy Efficient Lighting and Appliances
Safari Hotel, Windhoek, Namibia

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23 October 2018



Electricity enables us to do things....



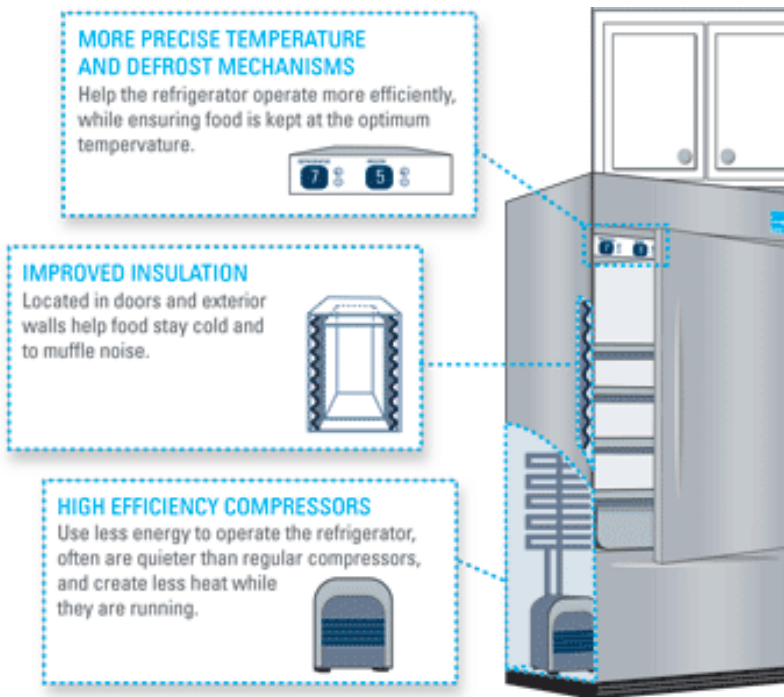
- Cold beer
- Cool air
- Bright lights
- Hot tea
- Hot showers
- Great movies
- Clean clothes
- Crisp toast



- Quality of life is really about services, not electricity
- Can we enjoy the same services while using less electricity?
- Yes – via energy-efficiency - and policy-makers hold the key

Energy-Efficiency delivers the same services using less energy in two ways:

1 Design improvements to existing products



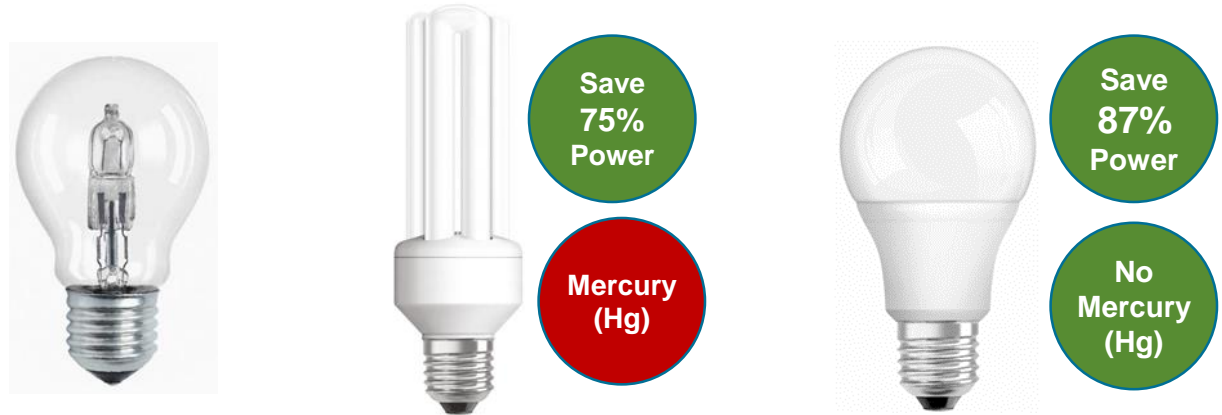
2 Technology shift - upgrade to better technologies



Halogen
52 Watts
720 lumens

LED
7 Watts
720 lumens

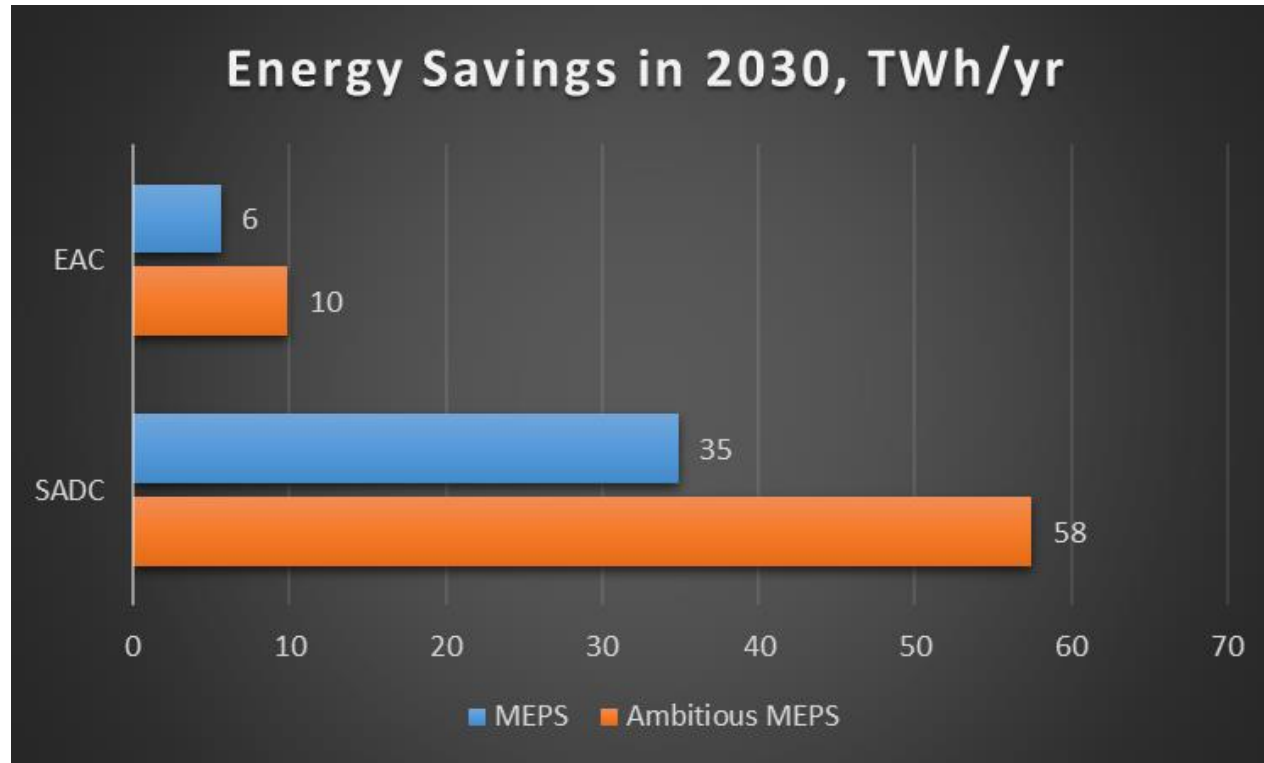
Efficient lighting in Namibia is cost-effective...



Item	Halogen	CFL	LED
Light	850 lm	850 lm	850 lm
Life	1000 hrs	6000 hrs	15000 hrs
Price*	N\$27.99	N\$29.99	N\$29.99
Power	70 W	15 W	9 W
Use (3hr/day)*	77 kWh/yr	16 kWh/yr	10 kWh/yr
Elec cost.*	N\$170/yr	N\$36/yr	N\$22/yr
5-year cost	N\$1019	N\$212	N\$139
Payback period		5.5 days	4.9 days

* Lamps purchased at Checkers in Windhoek, 22 Oct 2018. All regular prices, no special offers or discounts. Usage assumptions are: 3 hours/day, 365 days/year. Electricity is N\$2.22/kWh (2016 avg price). Lamp prices constant over 5 years.

The savings potential across Eastern and Southern Africa



Refrigerators



Air
Conditioning



Motors



Lighting



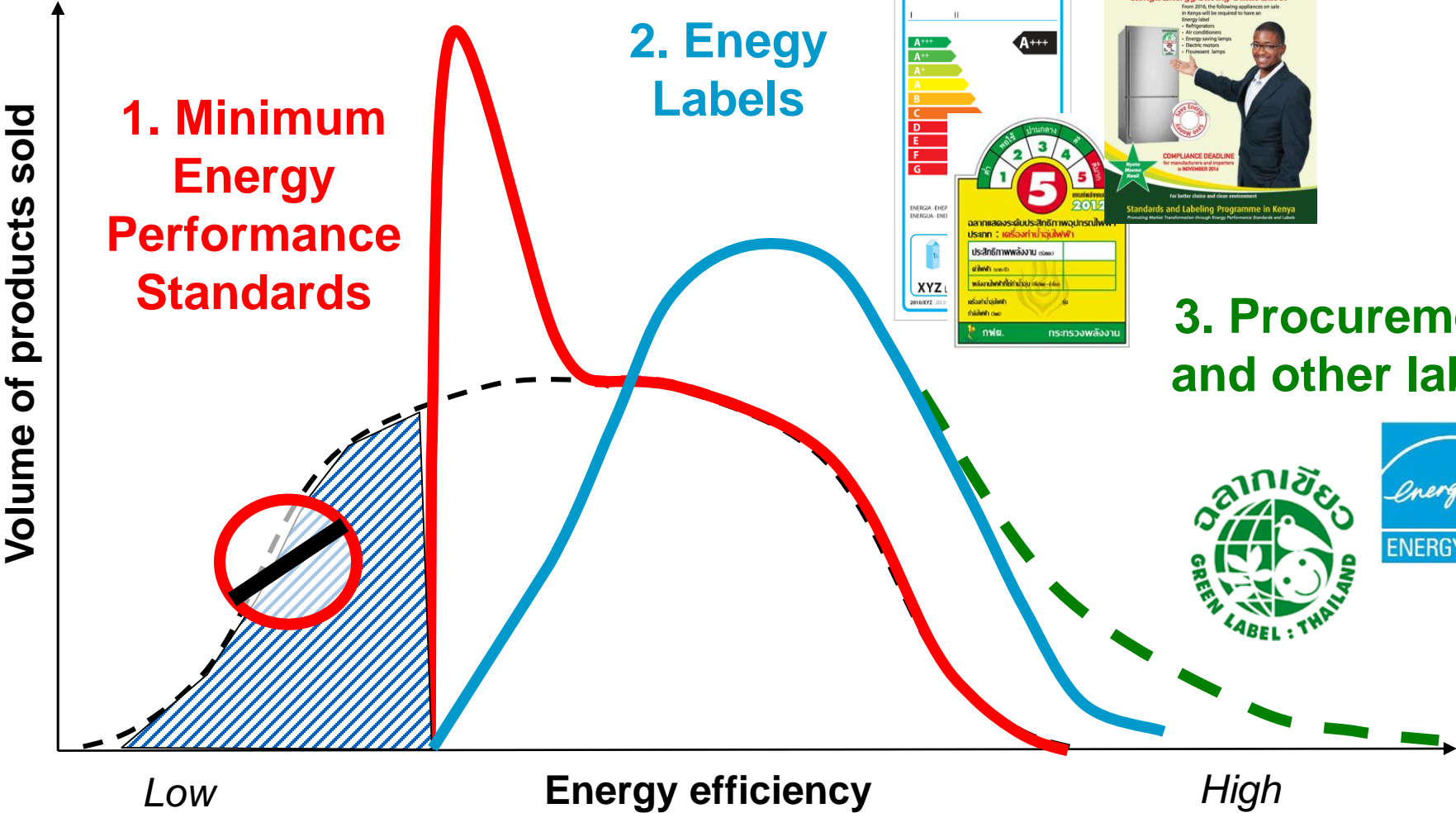
Transformers

- **Savings of 41 – 68 TWh/yr in 2030 across EA and SADC***
- **Equal to 5 - 8 times Kenya's total electricity consumption (IEA, 2016)**
- **Avoids 18 - 30 coal-fired powerplants**, costing US\$22-37 billion to build**

**EA: Burundi, Kenya, Rwanda, South Sudan, Tanzania, Uganda. SADC: Angola, Botswana, DRC, eSwatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Zambia, Zimbabwe.*

***Assuming US\$2,500/kW and a 500MW power plant operating at 0.50 availability, producing 2.19 TWh/yr.*

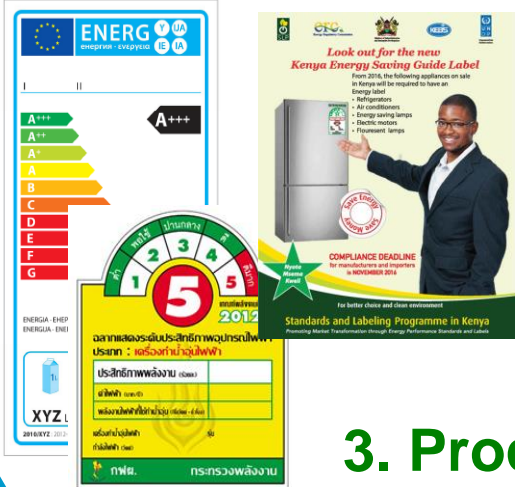
How do the policy measures capture the savings? Market push and pull, applies to new sales....



1. Minimum Energy Performance Standards

2. Energy Labels

3. Procurement, and other labels

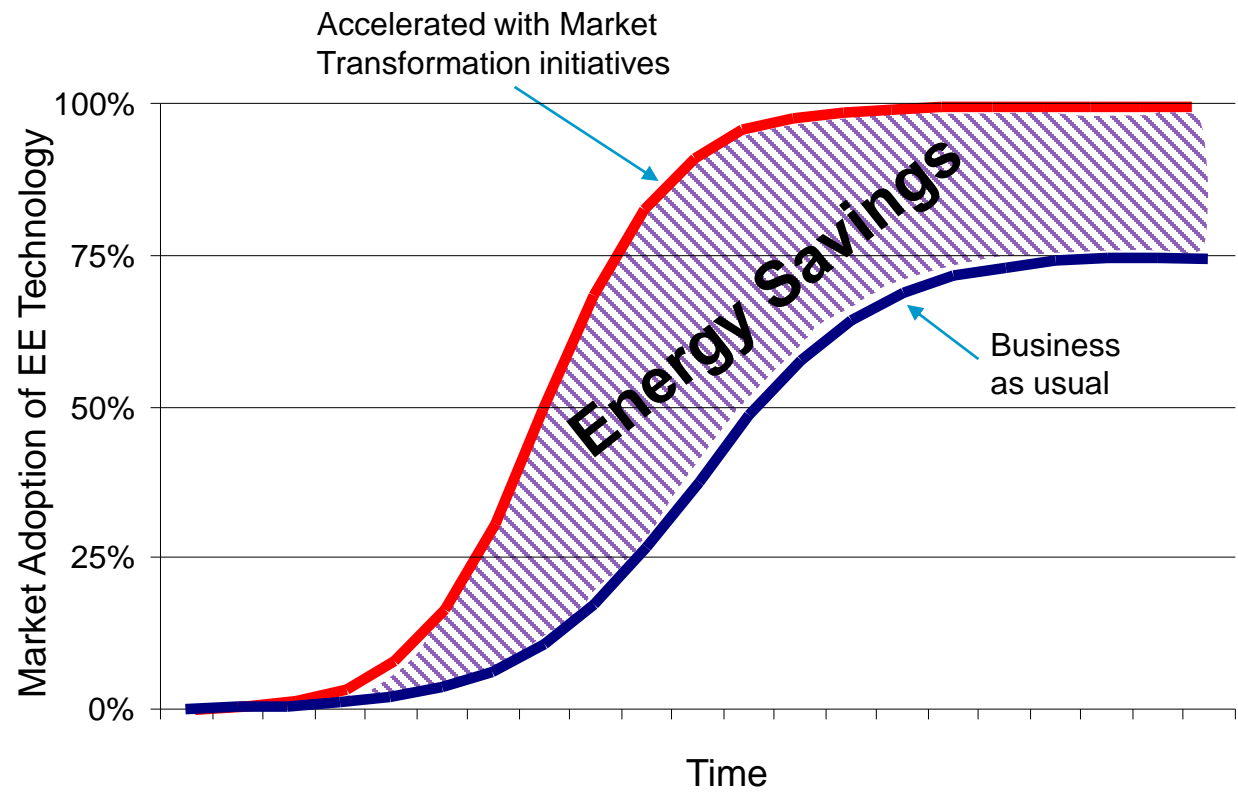


Market Impact: Capture more savings, sooner

- Policy and programmes accelerate a market's natural growth (shifts earlier) and increase overall market size (shifts to higher penetration)

Policy-makers promote efficient products with:

- Test standards
- Awards & prizes
- Voluntary programmes
- Incentives / coupons
- Bulk procurement
- Product labelling
- Minimum Energy Performance Standards (MEPS)



Benefits of market transformation to more efficient products

- **Household savings** - reduce household energy bills (but still enjoy the same services!);
- **Grid reliability** – reduce electricity shortages (brown-outs / black-outs); reduces peak power demand
- **Save national investment** – reduce capital and loans tied up in power stations and grid upgrades; slows new demand growth
- **Market protection** - avoid becoming dumping-ground for technologies banned elsewhere
- **Energy imports** – reduce capital out-flow for fuel purchases / electricity imports; strengthen national energy security
- **Climate change** – develop on a ‘soft energy path’, avoid becoming a high CO₂ emission country



Main take-away messages....

- People want services (not electricity)
- Energy-efficiency provides those same services while using less electricity, and cost-effectively
- By 2030, EA and SADC can save 5-8 times the total annual electricity use of Kenya
- Benefits include lower energy bills, grid stability, avoiding 'dumping ground' and reducing capital outflow
- Policy-makers hold the key – accelerate efficiency to capture more savings faster

- **Workshop tomorrow (24 Oct):**
“Introduction to Standards & Labelling”
14:00 – 17:00
here at the Safari Hotel, Windhoek
Moderator: Yohane Mukabe, COMESA



Thank you, any questions?

For more information come to tomorrow's workshop,
visit www.clasp.ngo or contact:

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