## Overview of the appliance training sessions

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What are energy labels?

• When people buy appliances they buy an energy service in two parts:
  1. They can see the appliance, and its cost
  2. They cannot see the energy consumed, or its running costs

• Energy labels provide consumers with information on the energy efficiency of a product

• There are two main types of labels:
  1. Comparative
  2. Endorsement
Comparative labels

• The label helps consumers to understand which products have the lowest total cost

• Energy label is attached to an appliance when it is displayed for sale: tells people about energy use before they buy

• Comparative labels may be voluntary, but mandatory is more common.

• Comparative labels usually communicates in two ways:
  • Quick visual rating
  • Data e.g. actual kilowatt-hours (kWh), Running costs, capacity/size
Common Comparative Labels (dial & bar)

- Ghana
- Thailand
- South Korea
- Indonesia
- Nigeria
- Kenya
- Singapore
- Tunisia
- South Africa
- Brazil
- China
- EU
Continuous Comparative Labels (continuous)

Comparative labels allow consumers to compare performance among similar products using either discrete categories of performance or a continuous scale.
Comparative labels allow consumers to compare performance among similar products using either discrete categories of performance or a continuous scale.
What information can be included? Philippines example

The Energy Efficiency Ratio (EER) of the air conditioner as tested and certified by an independent appliance testing laboratory. EER is determined by the following formula:

\[ EER = \frac{\text{Cooling Capacity}}{\text{Power Consumption}} \]

Use the formula to calculate the electricity cost and compare this with other air conditioners of the same cooling capacity.

The Cooling Capacity expressed in kilojoules per hour quantifies the maximum amount of heat that the air conditioner can remove from an enclosed space.

The Power Consumption expressed in watts tells you how rapidly the energy is used when your air conditioner runs at its maximum cooling capacity.

This air conditioner has to meet the stated minimum standard.

Your current electricity bill will give you a good estimate of the power rate.

**EXAMPLE:**

\[ \text{kWh used} = 650 \text{ kWh} \]
\[ \text{Net Bill Amount} : \text{P5,739.50} \]

\[ \text{Power Rate} = \frac{\text{P5,739.50}}{850 \text{ kWh}} = \frac{\text{P 8.83}}{\text{kWh}} \]
What information can be included? EU example

- Energy consumption
- Programme time
- Water consumption
- Power consumption in ‘off-mode’
- Power consumption in ‘left-on mode’
- ‘left-on mode’ duration
- Remaining moisture content
- Airborne acoustic noise emissions
- Maximum spin speeds.

Programme time

Kg laundry per wash

Remaining water content

Water consumption

Noise levels
What to do when you run out of space?

- Reconfigure label e.g. EU from A+++ to A
- Help consumers access more information e.g. via QR codes and or apps
Endorsement labels

- Identify the most energy efficient models, i.e. not all products labelled
- Generally endorsement labelling schemes show little product specific information for each model
- Endorsement labels are voluntary
- Can be updated more rapidly than a comparative energy label
- Usually paid for by manufacturers, third party tested
- Often linked to other policies - incentives
How to promote super efficient products?
Market Transformation: impact of different policies

**Leading Edge:** establishing new technologies in the market
- Innovation
  - R&D*
  - Demonstration
  - Technology transfer
  - Endorsement labels
- Market mechanisms increase incentives for higher energy efficiency across the whole distribution

**Mid Market:** spreading good practice
- Reduce barriers
  - Access to information / finance
  - Comparative labels

**Laggards:** discouraging bad practice
- Remove worst
  - Performance standards

* Research and Development
Energy labels are not just relevant for appliances

EU fuel consumption label for tires (November 2012)

What other products could have energy labels
Label placement
Label placement

Not just air conditioners
Label placement
Label placement

I just want something to sit on
Label Design

• The most effective labels are visually intuitive
  - Need to be clear, easy to understand and communicated.

• Do not put too much information on the label – ‘over crowding’ will likely lessen consumer response and impact

• But different labels work in different ways to reflect cultures & different perceptions
  - Letters vs number vs symbols
  - Language, script, left to right ranking
  - Positional indicator – how does this model rank on absolute scale and in relation to other models?
  - Is high number or low number better?

• Need to select one label format and stick to it.
  - Takes years for buyers to become familiar with labels.
Label placement

- Clear instructions for retailers
- Training for retailers
- Information on labels should also appear on electronic formats such as websites where consumers may purchase products online

Source: Amazon UK

Source: REI
Label placement

The best of both types of label?
Awareness-raising

• Effective labels require buyer awareness-raising campaigns.

• Buyer purchasing decisions that favor energy-efficient and high quality products ultimately provide a “pulling” force in the market.

• Encouraging consumers and others to buy products at the high end of efficiency and quality creates market demand (and drives down prices).
Comparison Tools **PocketWatt tool**
Label Awareness Raising

https://www.youtube.com/watch?v=G5KPNYcHCNg
Energy Labels – key considerations

• MEPS and labelling often work closely together
  - Lowest rank of comparative label begin at MEPS level
  - Endorsement labels align with higher ranks

• Consumer awareness is crucial

• Checking compliance is important

• Ongoing evaluation of energy labels (and their S&L programme) is needed to measure how well it is working and if it can be improved
Exercise

Divide into three groups

Examine the labels

Each group to discuss and report back about the effectiveness (pros and cons) of one comparative label
Exercise

1. Dial
   Australia

2. Bar
   EU

3. Continuous
   US
Label vs Actual Consumption
A newspaper article has questioned the validity of energy labels on refrigerators, saying that the label does not reflect real usage. Your manager has asked you to outline a response.

*What do you say?*
Understanding the issue

What information is included on the label, how is it sourced?

What do we think might be the explanation?

• Results on label based on ‘standard’ laboratory test
  - E.g. International, regional or local technical standard
  - Plus any guidelines for conducting test

• Laboratory test gives energy performance under strict conditions

• Average usage patterns, energy costs, calculated to give other indicators

• You would not expect each refrigerator to provide the exactly same performance in the home as in the laboratory
Case study

• Why may real use of a refrigerator vary from the test results?

• Possible variations
  - Climate – ambient conditions
  - Door opening frequency
  - Loading - foodstuff
Summer and winter same model: impact of ambient temperature
Same model, different households: impact of users
Test Label vs actual performance

So:

- You **would not** expect each refrigerator to provide the *exactly* same performance in the home as in the laboratory

But problems arise if they are too different (not sufficiently representative):

- Consumer complaints
- Unrealistic savings estimates & cost-benefit
- Poor signal to product designers
- **Products sense that they are under test**
Final points..

- Performing differently under test from general use is not conclusive evidence of a fraudulent product
- Why? Because the test procedure may not be reflective of ‘normal’ circumstances
- The better tests try to mimic either a range or an average set of conditions reflective of the ‘real world’
- However, a single test cannot replicate the many differing ambient and usage conditions found
- So some divergence is inevitable
- Detailed observation of product behaviour under different conditions may be required for conclusive proof
Resources


https://www.anti-circumvention.eu/about-project/project-introduction

PocketWatt tool

https://www.youtube.com/watch?v=INWxQ_6P4Iw

https://www.youtube.com/watch?v=lwsngT68B0o

https://www.youtube.com/watch?v=G5KPNYcHCNg

https://clas.mailist-manage.com/click.zc?od=2d5a885a69b60a9728b9f335ce1521b9b1185630859ca1fd0&repDgs=143c97170cc8a2df&linkDgs=143c97170cc88583

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