Toolkit:

Insights into energy labels

Appliances & Equipment: 3

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Delhi, 11 December 2018

#energyefficientworld

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Different types of labels: Comparative labels

- When people buy appliances they buy an energy service in two parts
  - They can see the appliance, and its cost
  - They cannot see the energy consumed, or its running costs
- The label helps consumers understand which products have the lowest total cost during the purchase process
- 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 and
  - Some data e.g. actual kilowatt-hours (kWh), Running costs, capacity/size

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Common Comparative Labels

Dial

Vietnam



Thailand



South Korea



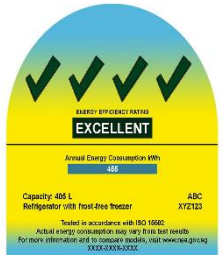
Indonesia



Malaysia

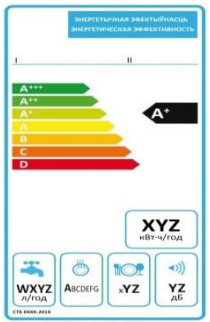


Singapore

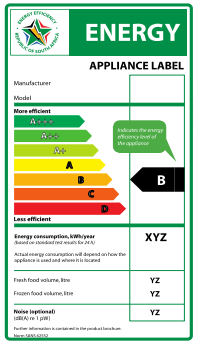


Bar

Belarus



South Africa



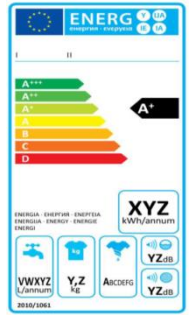
Brazil



China



EU



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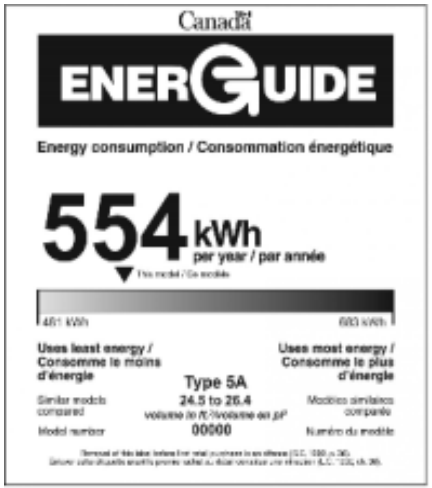
Common Comparative Labels

Continuous

US



Canada



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Different types of labels: **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 may be mandatory or voluntary, but voluntary is more common
- Can be updated more rapidly than a comparative energy label
- Usually paid for by manufacturers, third party tested
- Often linked to other policies

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Endorsement labels - examples











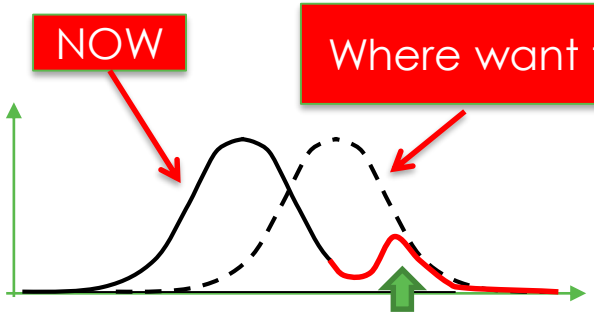




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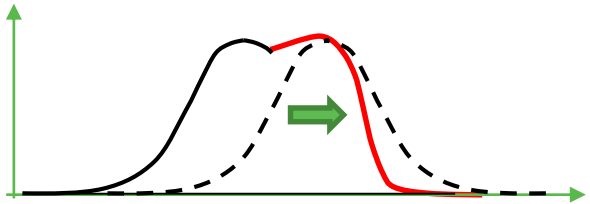
Market Transformation: impact of different policies

Leading Edge: establishing new technologies in the market



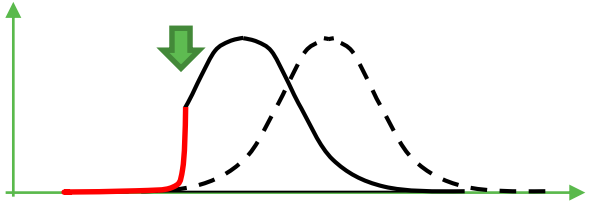
Innovation
- R&D*
- Demonstration
- Technology transfer
- **Endorsement labels**

Mid Market: spreading good practice



Reduce barriers
- Access to information / finance
- **Comparative labels**

Laggards: discouraging bad practice



Remove worst
- Performance standards

Market mechanisms increase incentives for higher energy efficiency across the whole distribution

* Research and Development

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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.

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Energy Labels

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

- Information on labels should also appears on electronic formats such as websites where consumers may purchase products online.

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

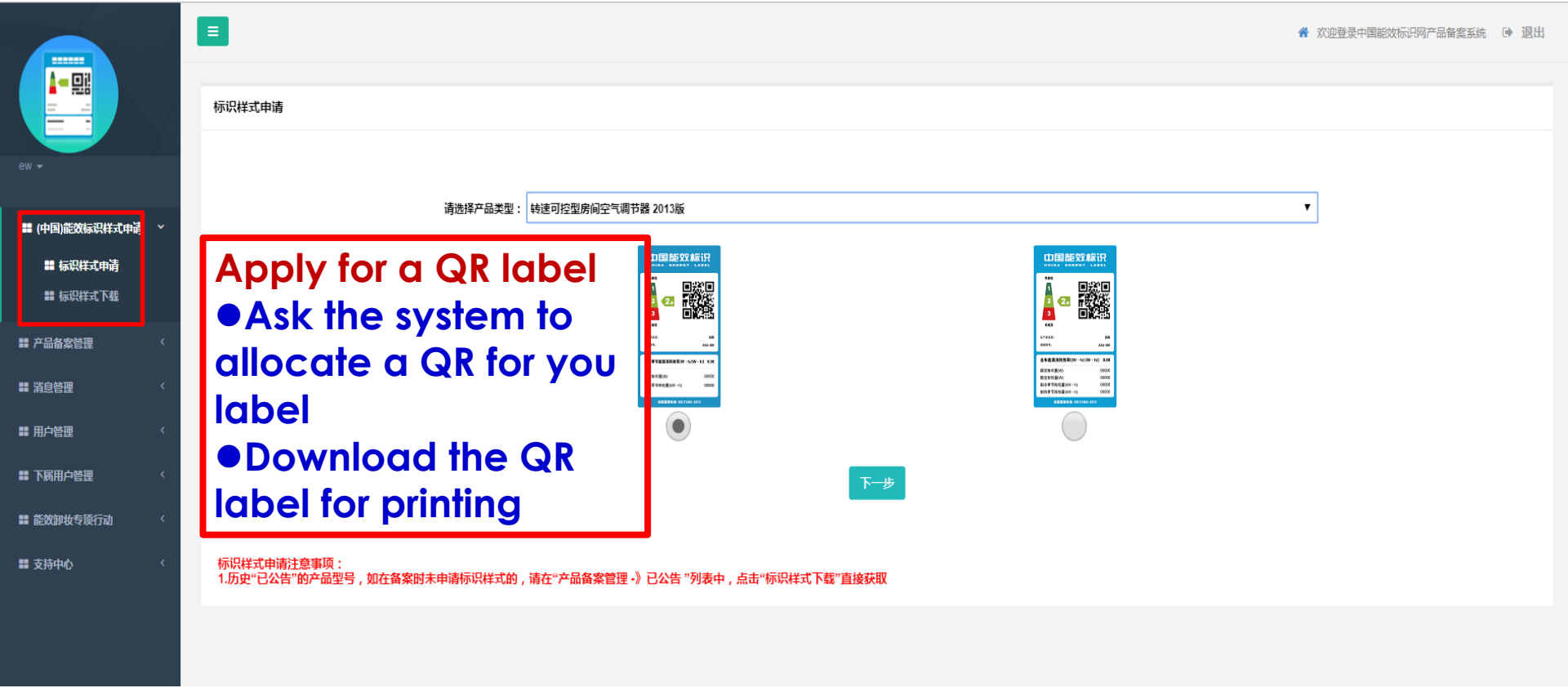
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Example of QR Code integrated into label

- QR Code in China

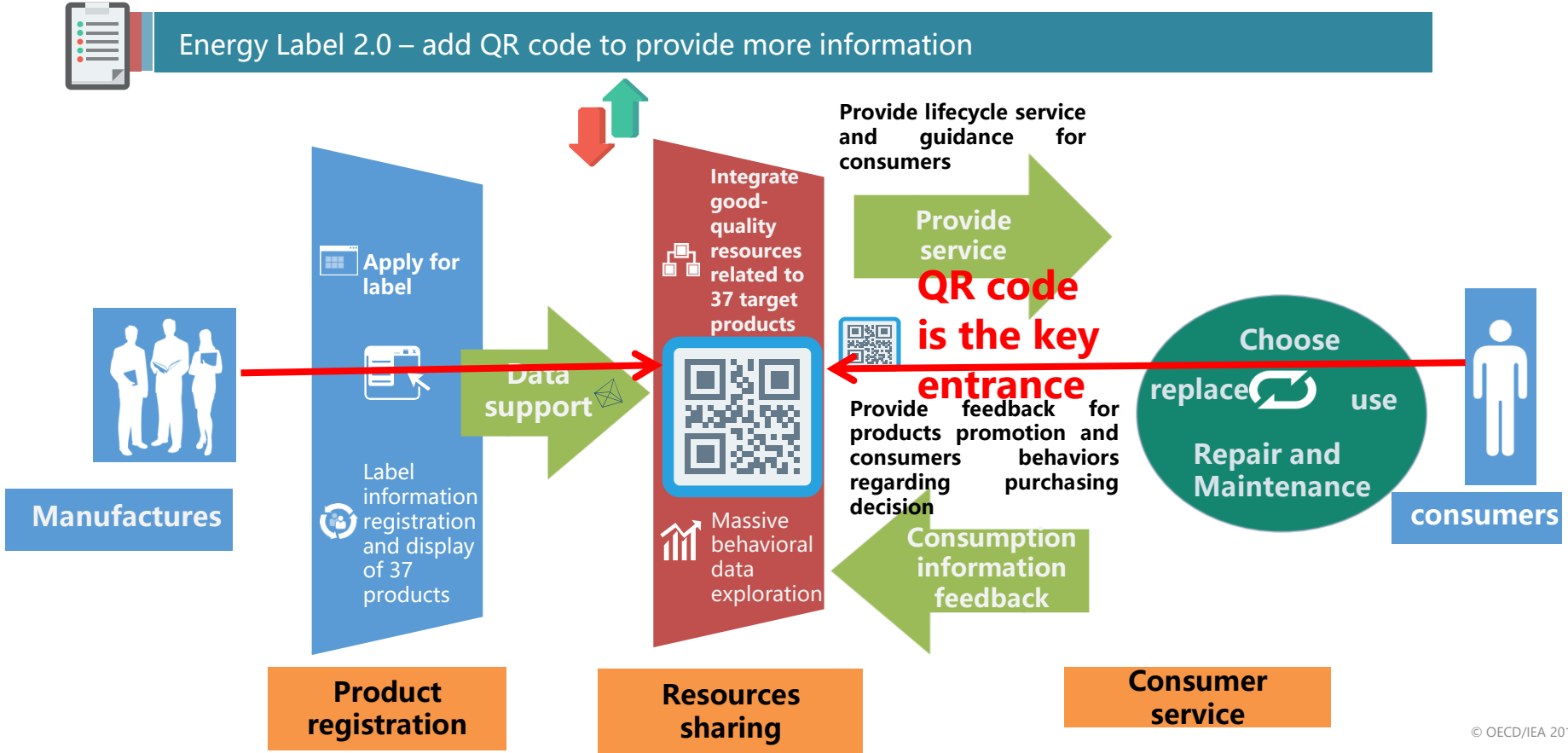
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How to create a QR label



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Logical Framework of QR Label Information Platform



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Arrangements of Pages for QR Platform





1）product performance information

Registration information, structure and other performance, usage guide, products comparison and comments, operating manual, etc.

2）compliance information

National check-testing results

Check-testing results organized by manufacturers alliance or consumers organization or CNIS

3）Life-cycle service

Integrate resources for repair, clean, maintenance, recycle, etc..

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Pages of QR Label Information Platform

Registered information





Parameters reading



Parameters reading

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Pages of QR Label Information Platform

Registered informaiton



Structure and performance



Operating manual



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Pages of QR Label Information Platform



Purchase guide and operation tips



Column for industry evaluation



Column for operation

Pages of QR Label Information Platform

Check-testing program by government, manufacturers alliance consumer organization CNIS, etc.



Check-testing compliance for manufacturers and labs



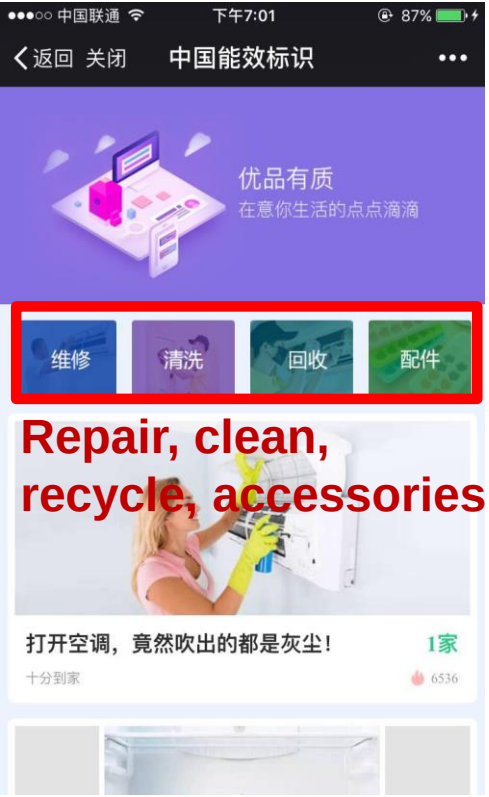


Display compliance check for On-line retailors

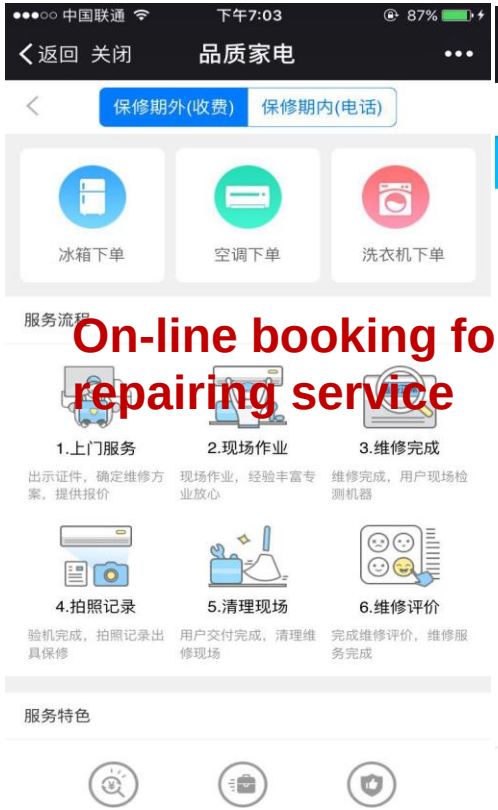


Pages of QR Label Information Platform

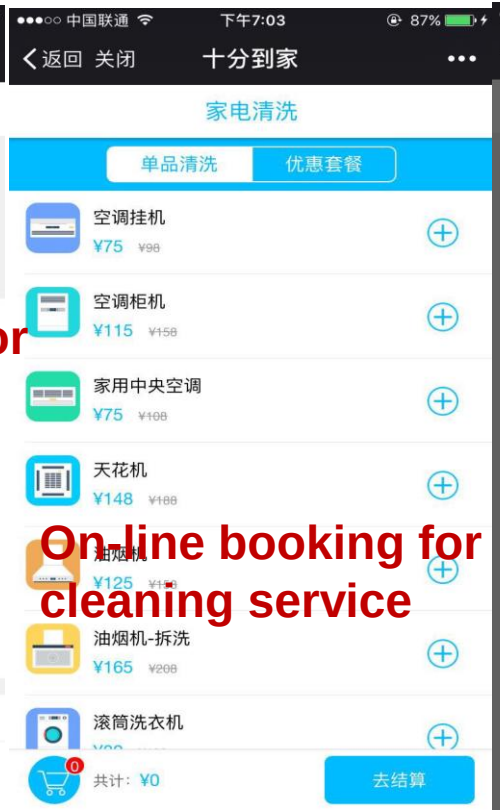
Life cycle services



Repair, clean, recycle, accessories



On-line booking for repairing service



On-line booking for cleaning service



Formal Implementation Since October 2016





55 million users

- **113 million** times of service for products quality information service, **300 thousands** times per day
- **60 million** times of after-sales services including cleaning, repairing and recycling
- **6874** manufactures, **423** cities

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Benefit brought by QR label







Manufacturers:

- Customized information service to promote high quality products
- Cost saving in after-sales service

Government :

- Guide sustainable development of industry
- Public platform for energy conservation policies

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Group Exercise

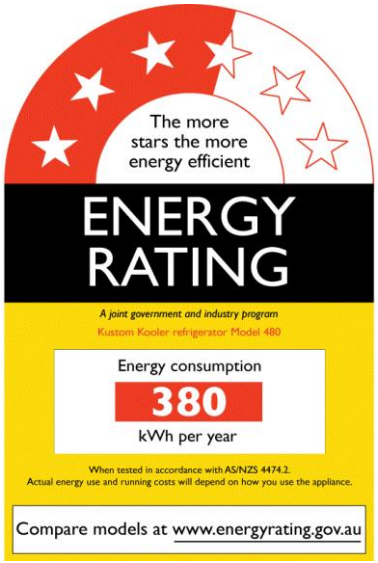
- Divide into three groups
- Each group to discuss and report back about the effectiveness (pros and cons) of one comparative label



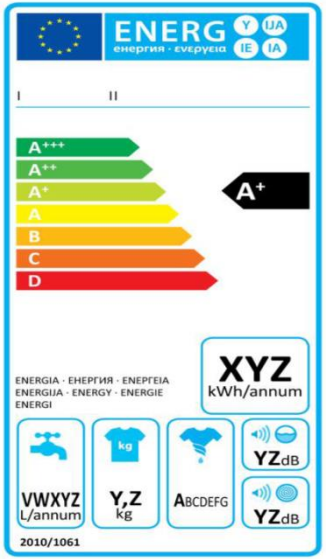
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Group Exercise

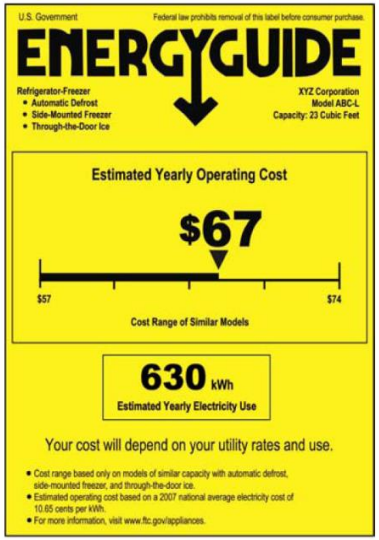
1. Dial
Australia



2. Bar
EU



3. Continuous
US



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Scenario

A newspaper article has questioned the validity of comparative energy labels on refrigerators, saying that the label does not reflect real usage.

Apparently they measured several refrigerators in homes and found that they did not perform as claimed on the label.

How would you respond?

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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

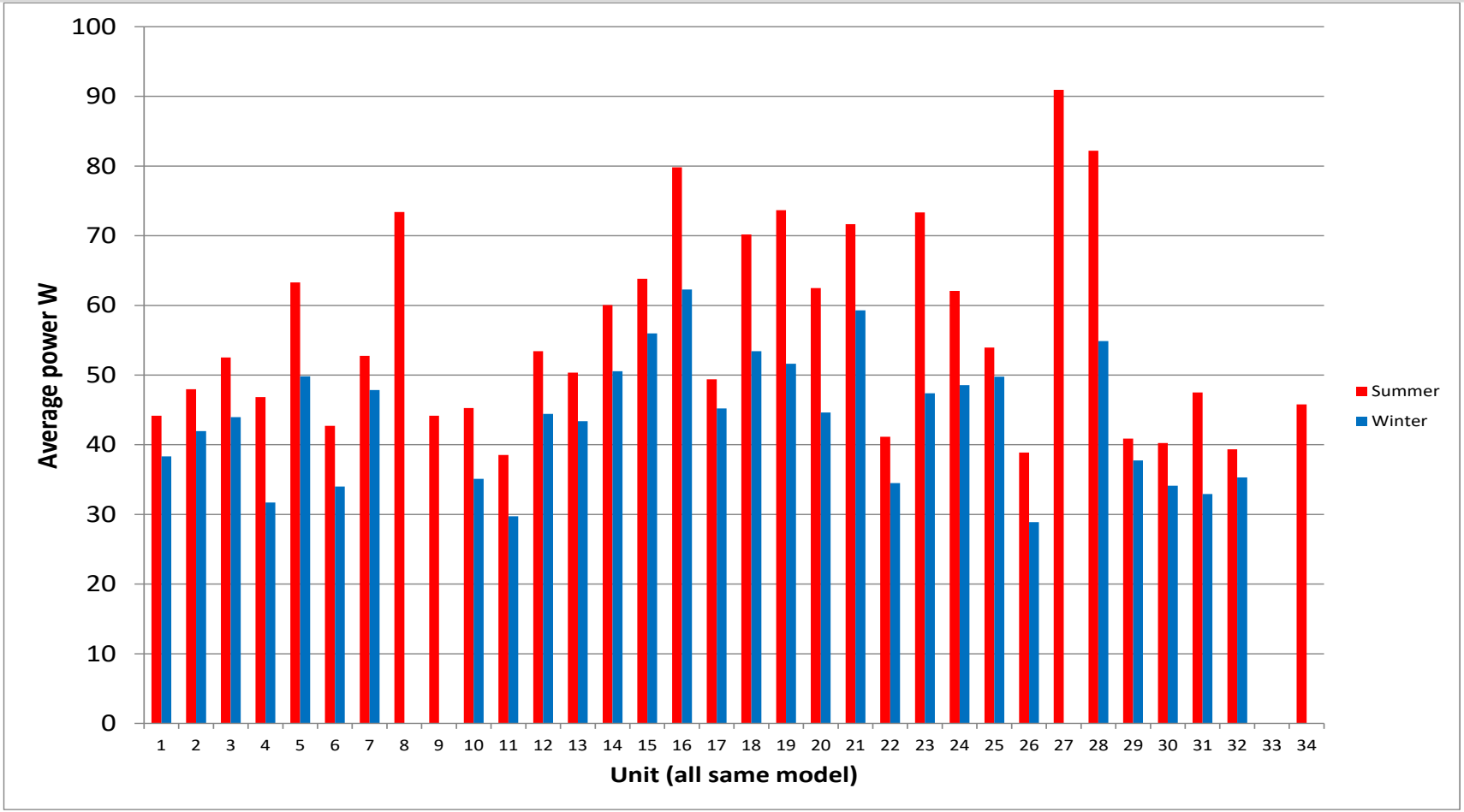
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Case study

- Why may real use of a refrigerator vary from the test results?
- Possible variations
  - Climate – ambient conditions
  - Door opening frequency
  - Loading - foodstuff

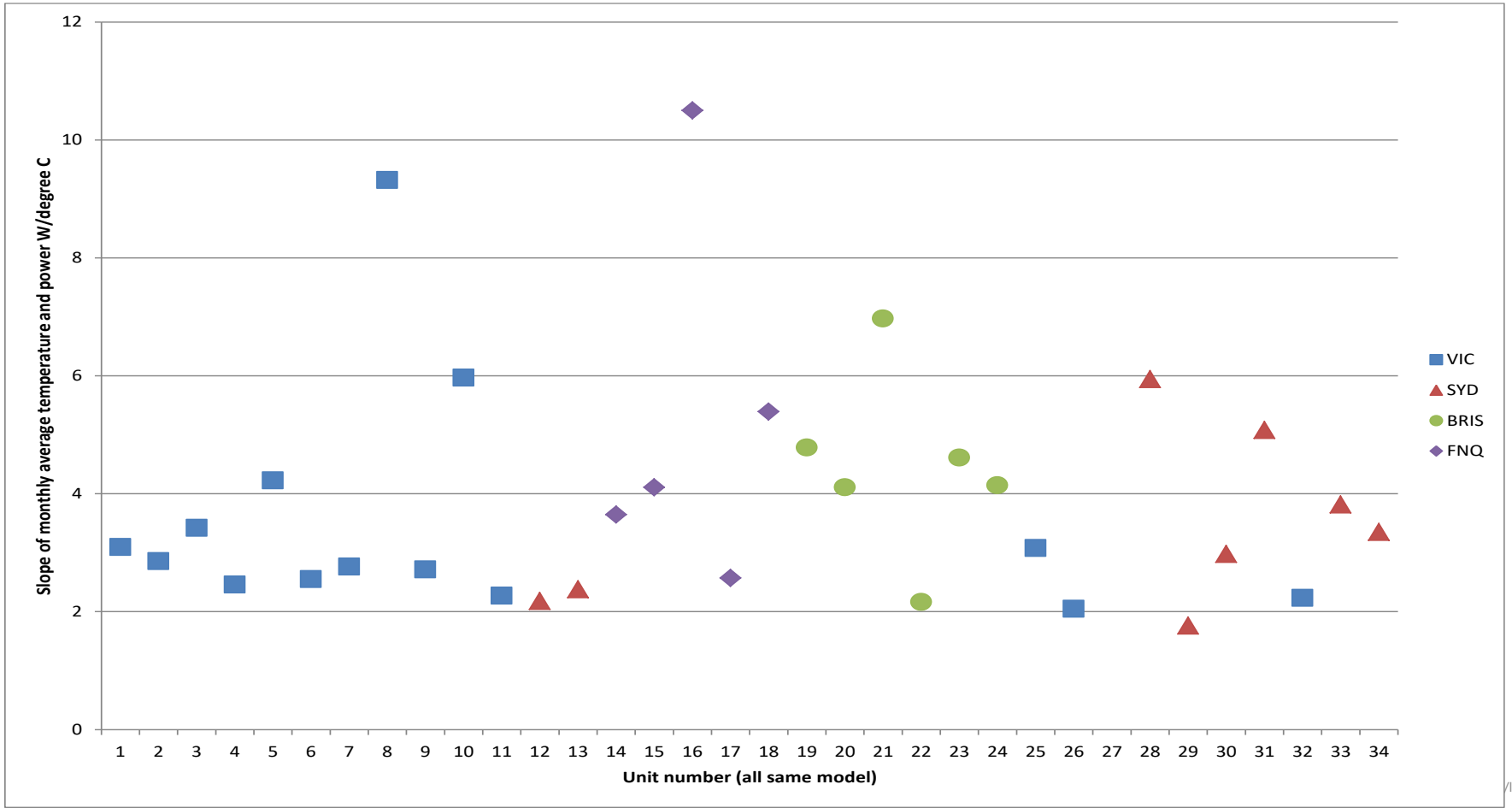
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Summer and winter same model: impact of ambient temperature



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Same model, different households: impact of users



Summary

- 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**

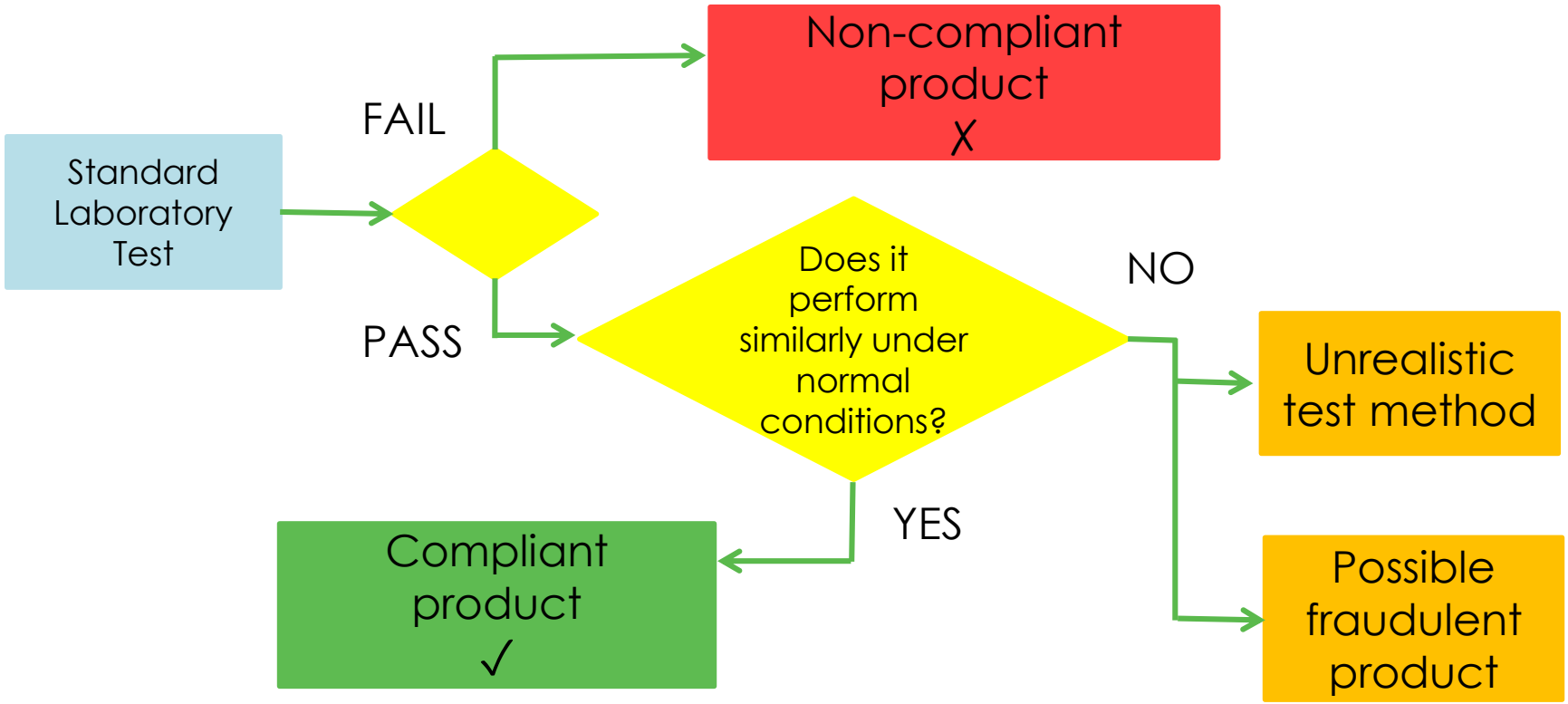
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What are fraudulent products?

- Products designed to perform differently under test to outside the laboratory.
- Include mechanisms to sense and circumvent the test procedures.
- Sometimes referred to as ‘defeat’ devices.
- Not strictly an issue of ‘non-compliance’, since they meet requirements under test conditions
- Products performing significantly worse outside the lab. leads to an adverse impact on energy consumption, consumer benefit, the environment and competition.

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Test procedures: Representative, fraudulent



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Summary

- 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

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