

Trends in Energy Efficient Appliances in the EU

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SEVEn

American Center, 31st March 2011

Content

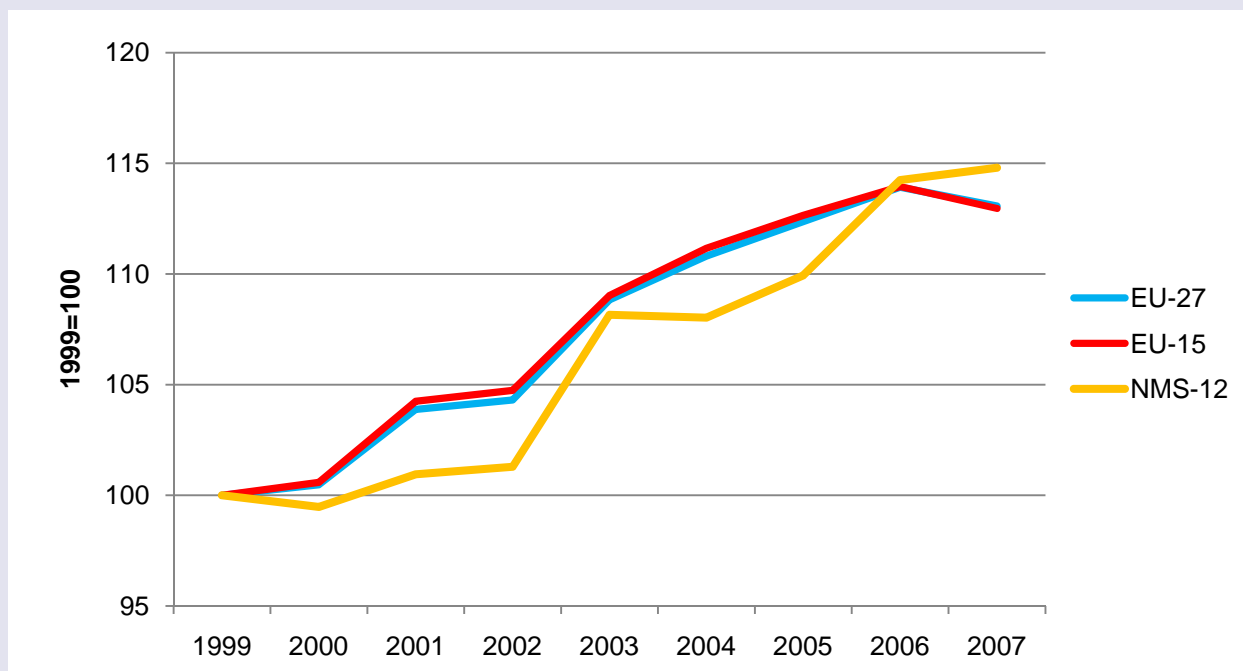
- Background and trends in electricity/appliance consumption
- European legislation on appliances
 - Labelling and Ecodesign
- Bottlenecks as observed from practice

SEVEn, The Energy Efficiency Center

- Non-profit energy efficiency consultancy since 1990 (founded by the ACEEE)
- Projects combining technical evaluation / economic advisory / promotional aspects
- With a focus (among others) on household appliance and lighting efficiency

EU residential electricity consumption

- EU-27: 800 TWh in 2007
- Growth by 13 % in 8 years, 15 % in NMS



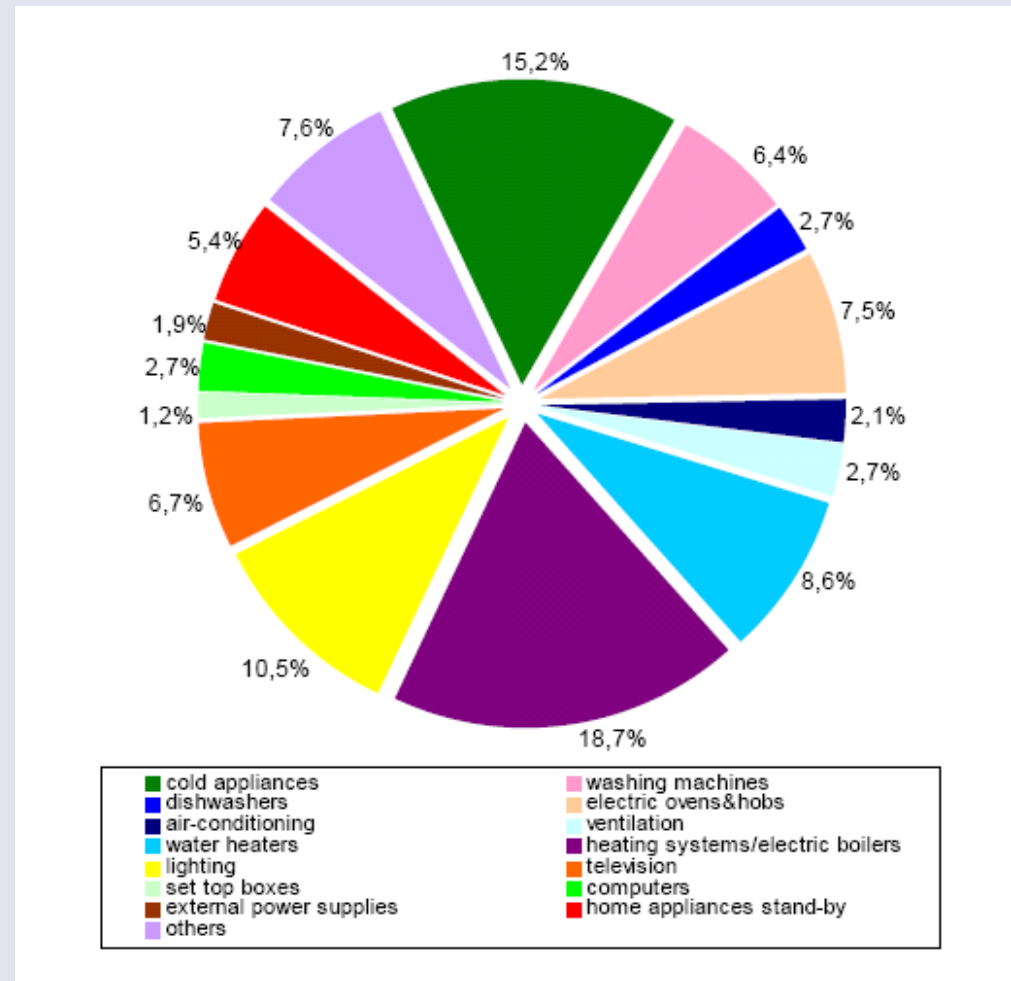
EU residential electricity consumption

End-use:

27 % heating and hot water

10 % lighting

58 % appliances



Source: Bertoldi , Atanasiu 2010

EU residential electricity consumption

End-use

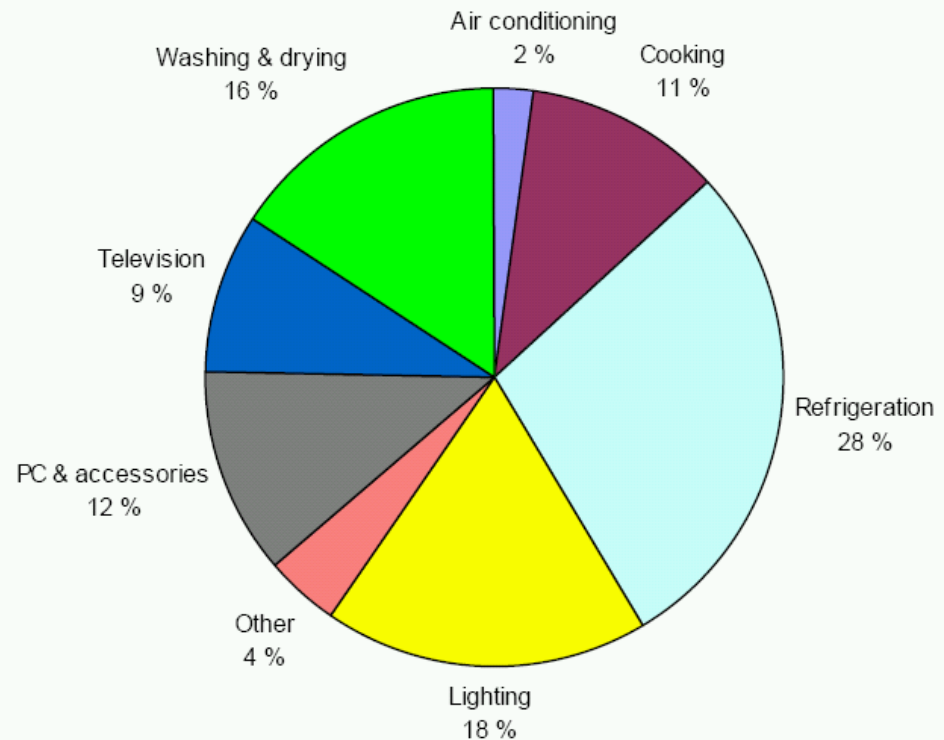
excluding heating and hot water

Low power modes

ca 11 %

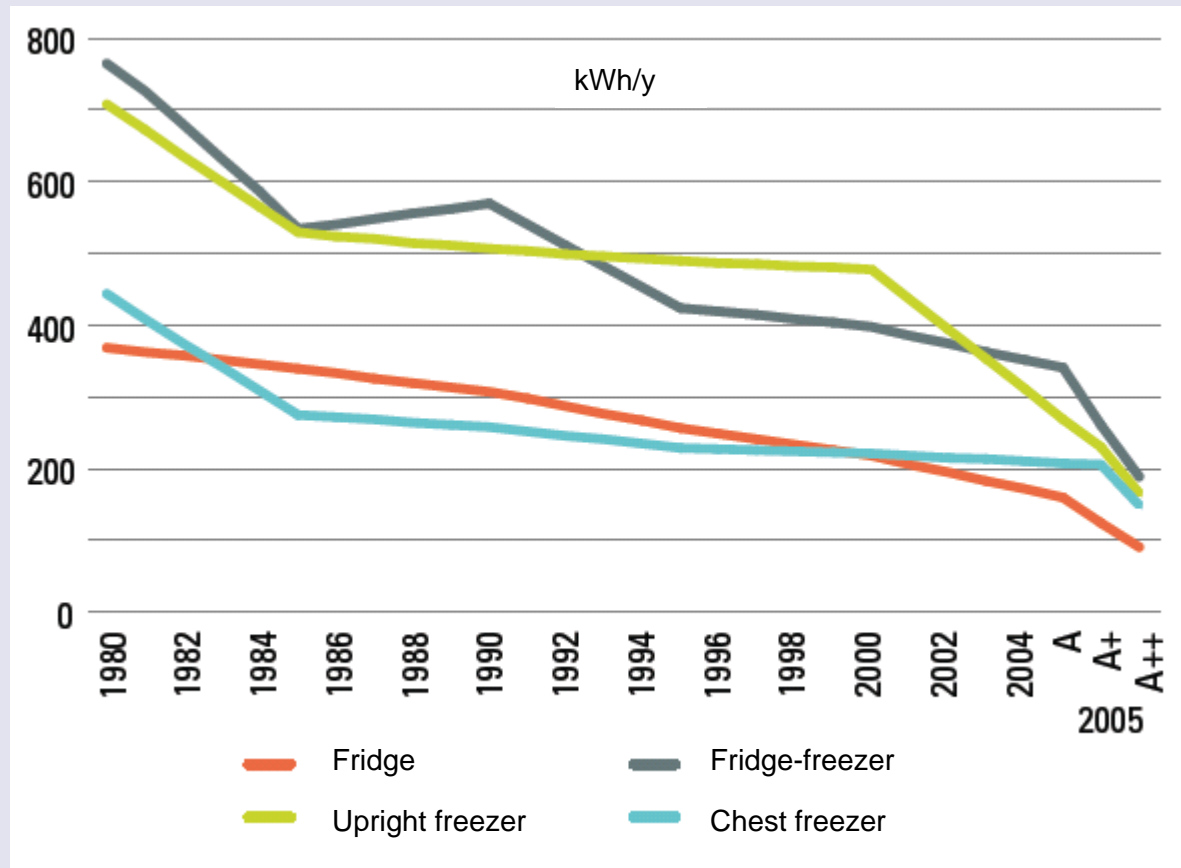
(8 % in CEE region)

Distribution of Yearly Electricity Consumption for a Typical Household in Europe



EU residential electricity consumption

Good news



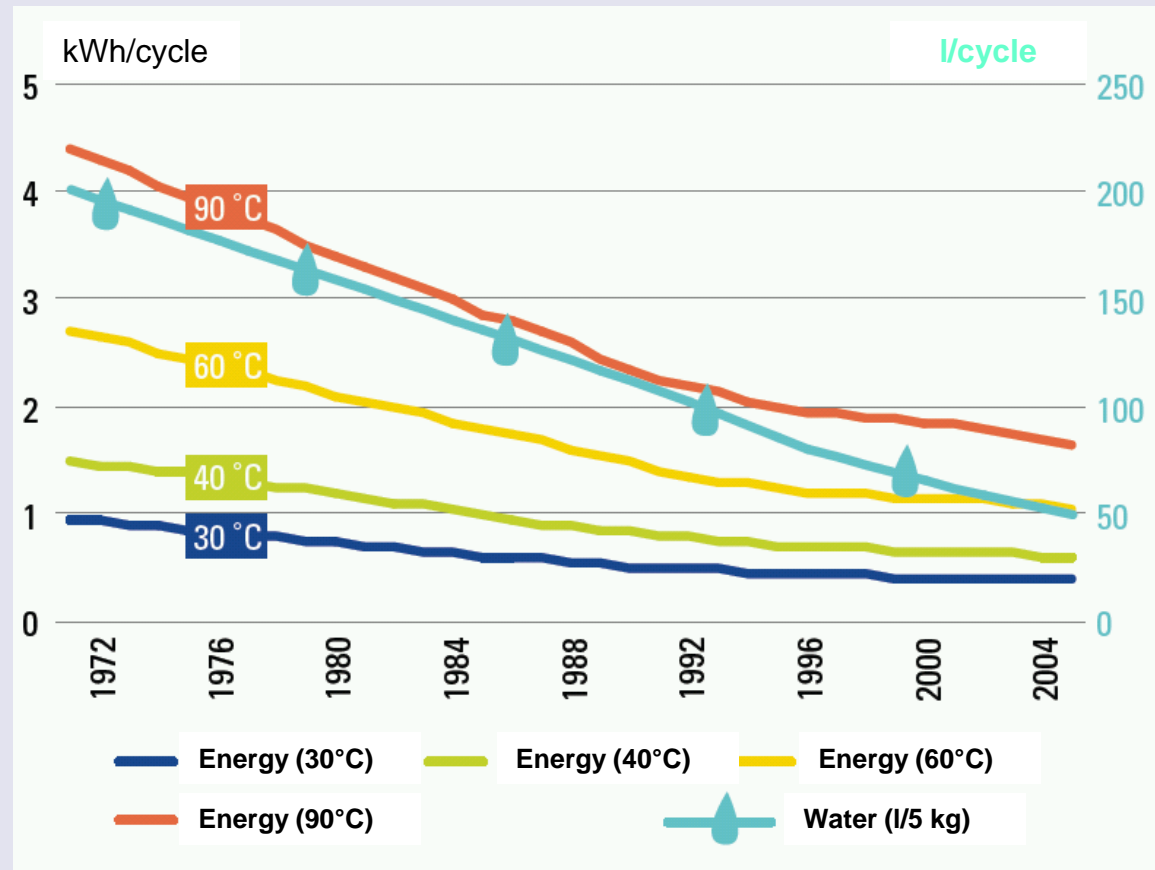
EU residential electricity consumption

Good news

In 2010

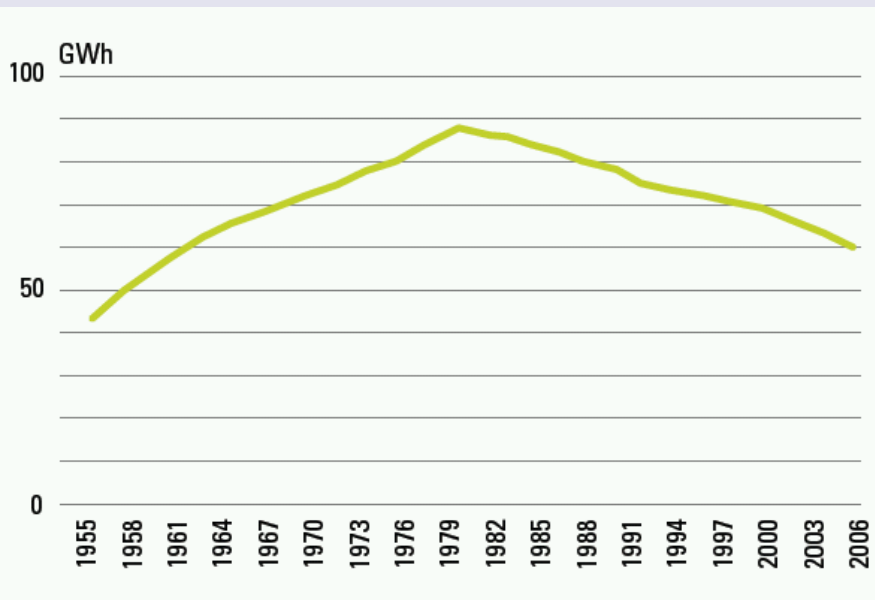
- 0,85 kWh/cycle

- 35 l/5kg

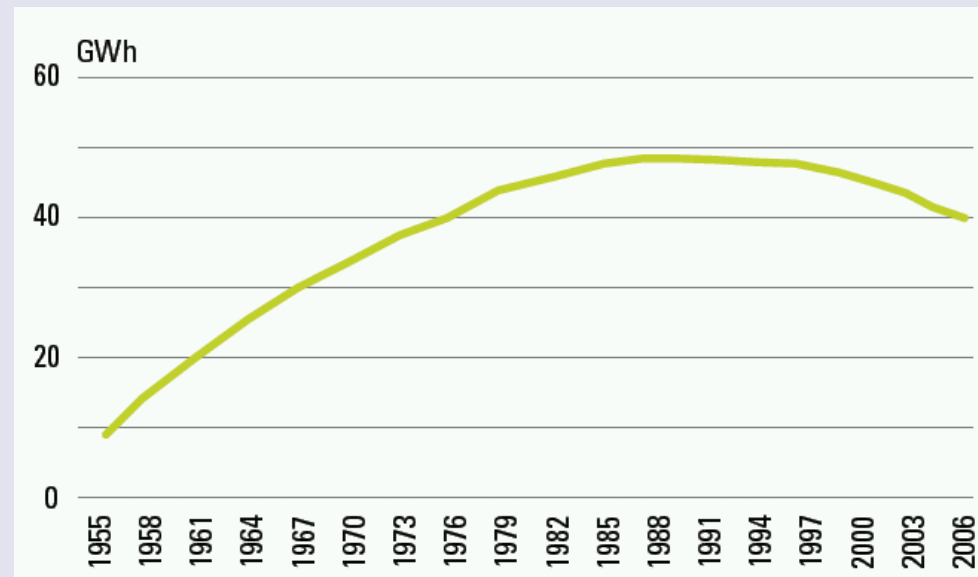


EU residential electricity consumption

Still good news



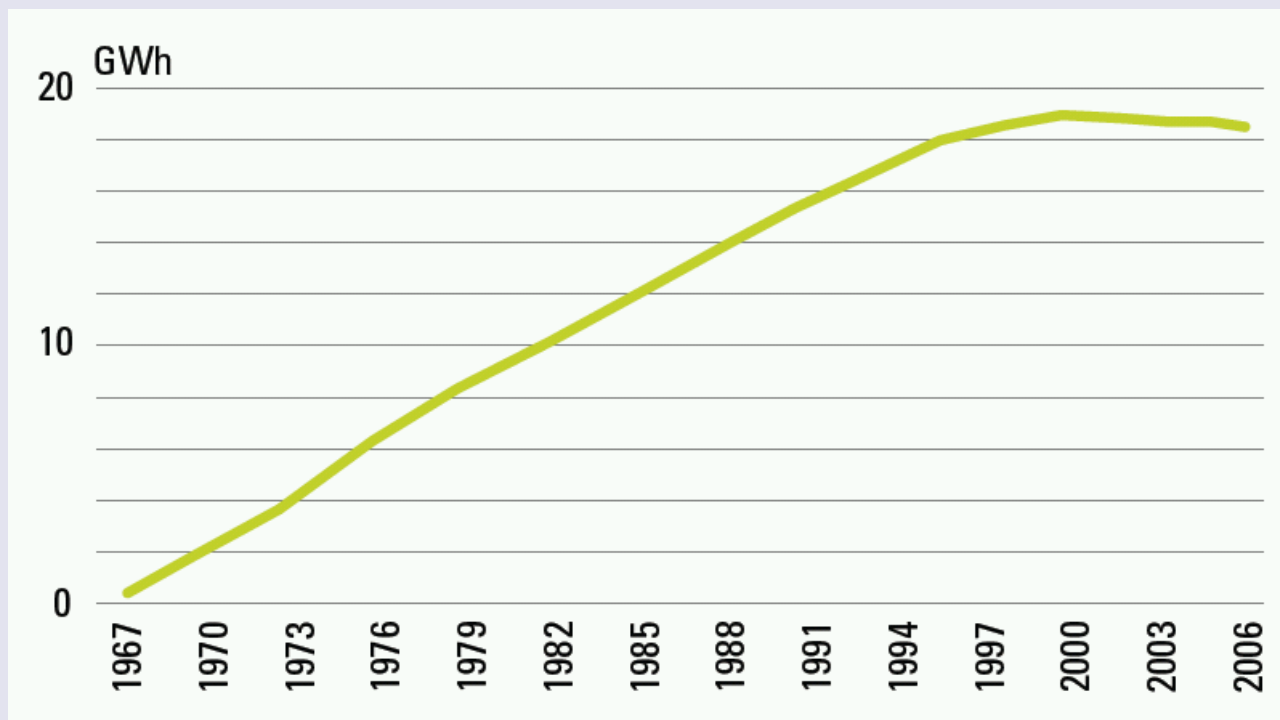
Total Electricity Consumption of Refrigerators in EU



Total Electricity Consumption of Washing Machines in EU

EU residential electricity consumption

However,



Total Electricity Consumption of Dishwashers in EU

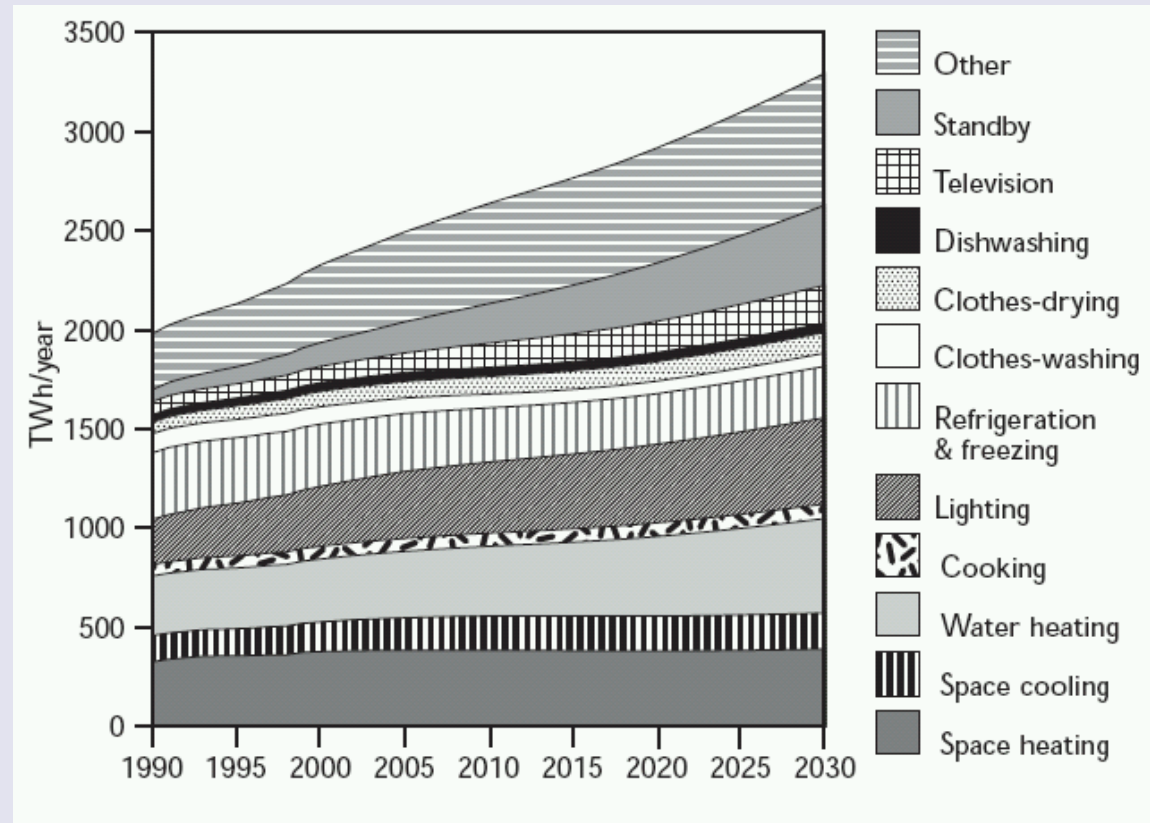
Residential electricity consumption

Less good news

- More appliances in homes
 - 28 appliances in Australian homes (+ 15 unplugged) drawing power when not in use
 - average 10 appliances in CEE region
- New types of appliances (el. photo frames)
- More appliances consuming electricity constantly (low power modes)

Residential electricity consumption

Less good news

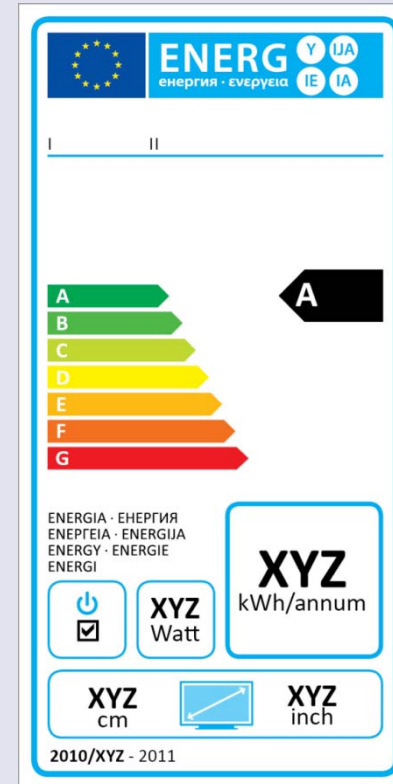


Projected IEA residential electricity consumption by end-use with current policies

European legislation on appliances

Energy Labelling

- Types of labelled appliances
 - NEW in 2011: TVs, refrigerators, washing machines, dishwashers.
- Electric ovens, light sources, air-conditioning units, dryers





Car tyres

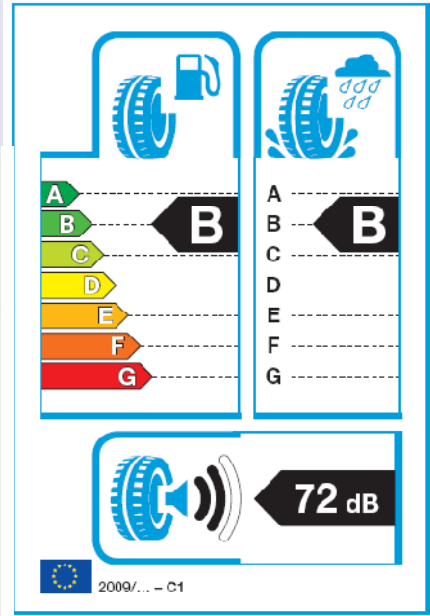
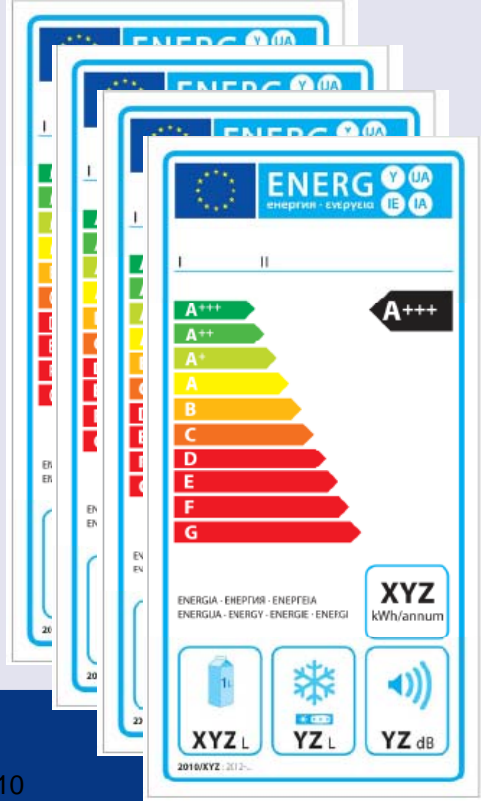
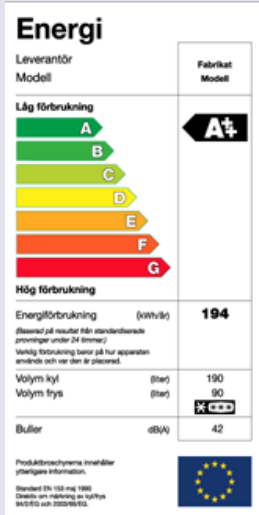
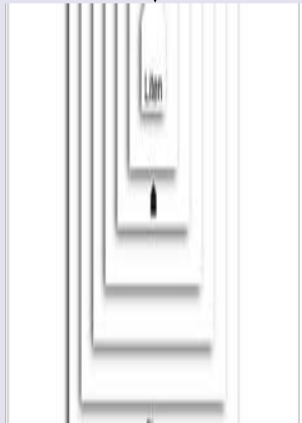
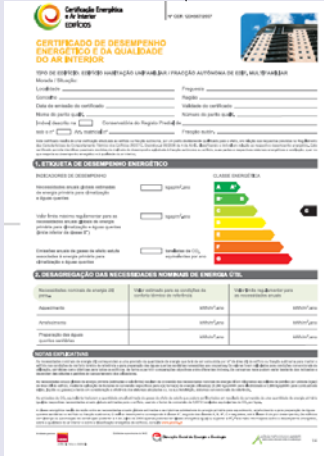
Labelling directive

Buildings

1994-2010

2010-

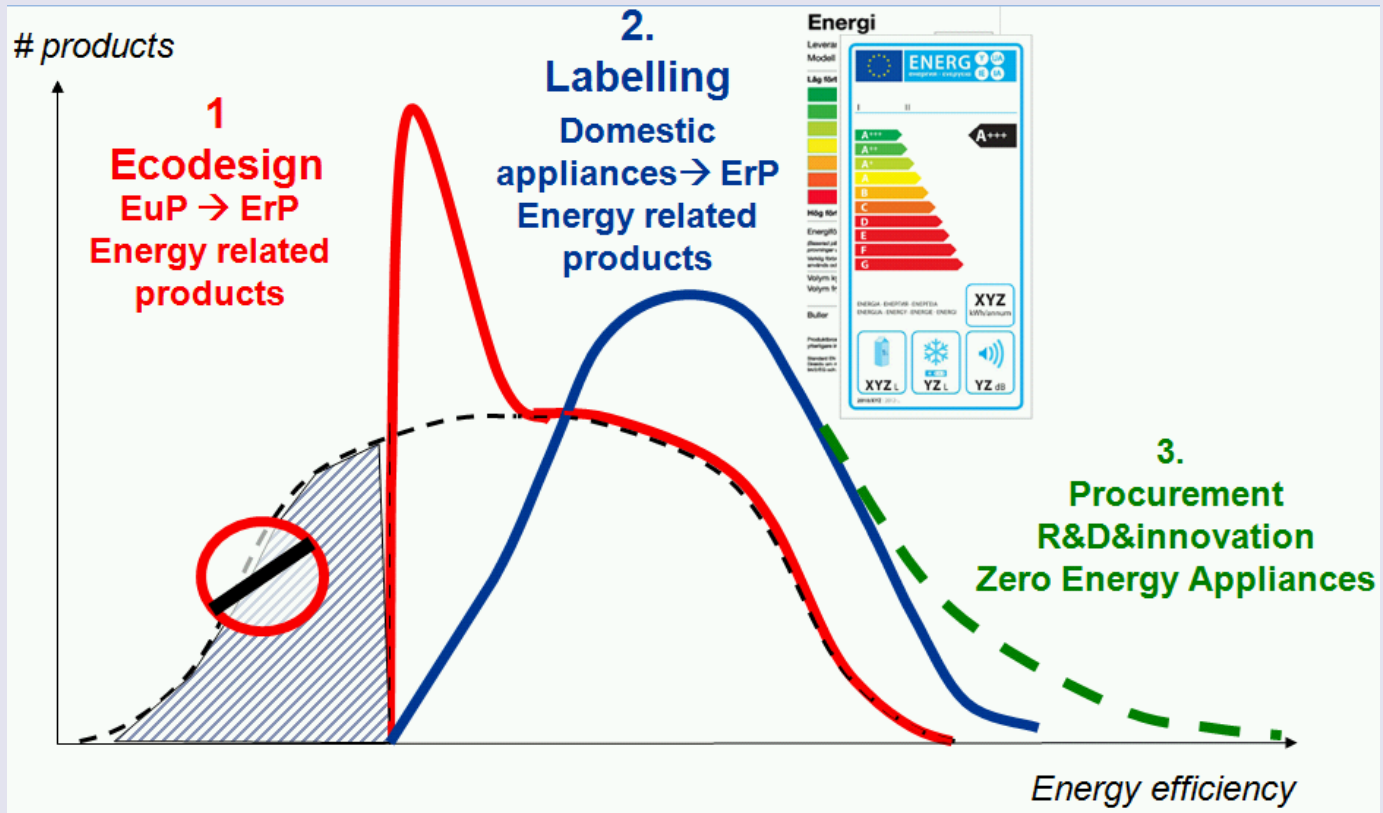
2010-



Ecodesign requirements

- Minimum efficiency standards for energy using/related products
- Usually contains other related requirements (functionality, information, etc.)
- Currently covers more than 30 different product categories
 - refrigerators, lighting, set top boxes, battery chargers, electric motors, standby, TVs,...
 - Criteria: sales, environmental impact, potential savings
- Does not limit the functionality of products

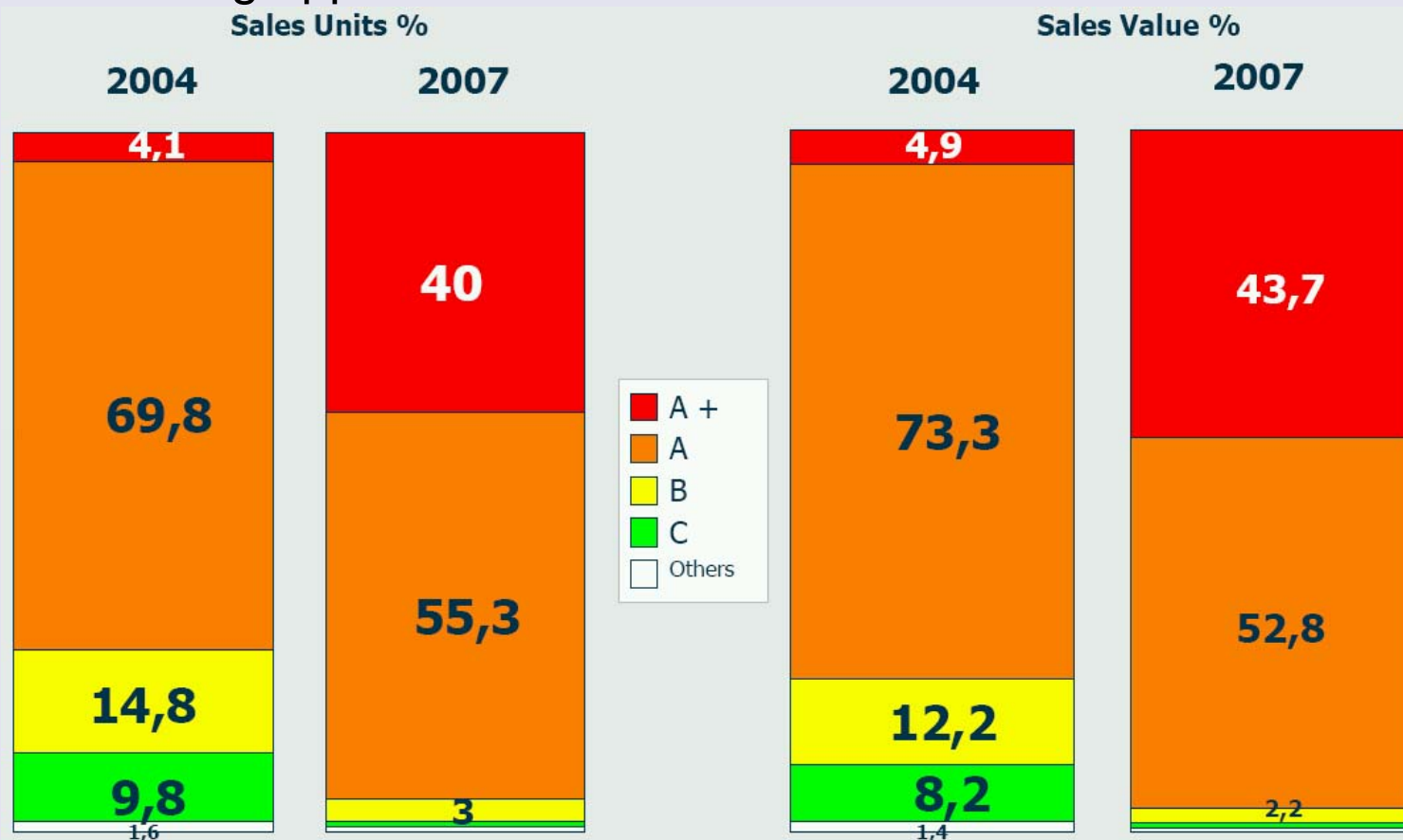
Effects of the legislation



C.Lopes, Swedish Energy Agency, 2010

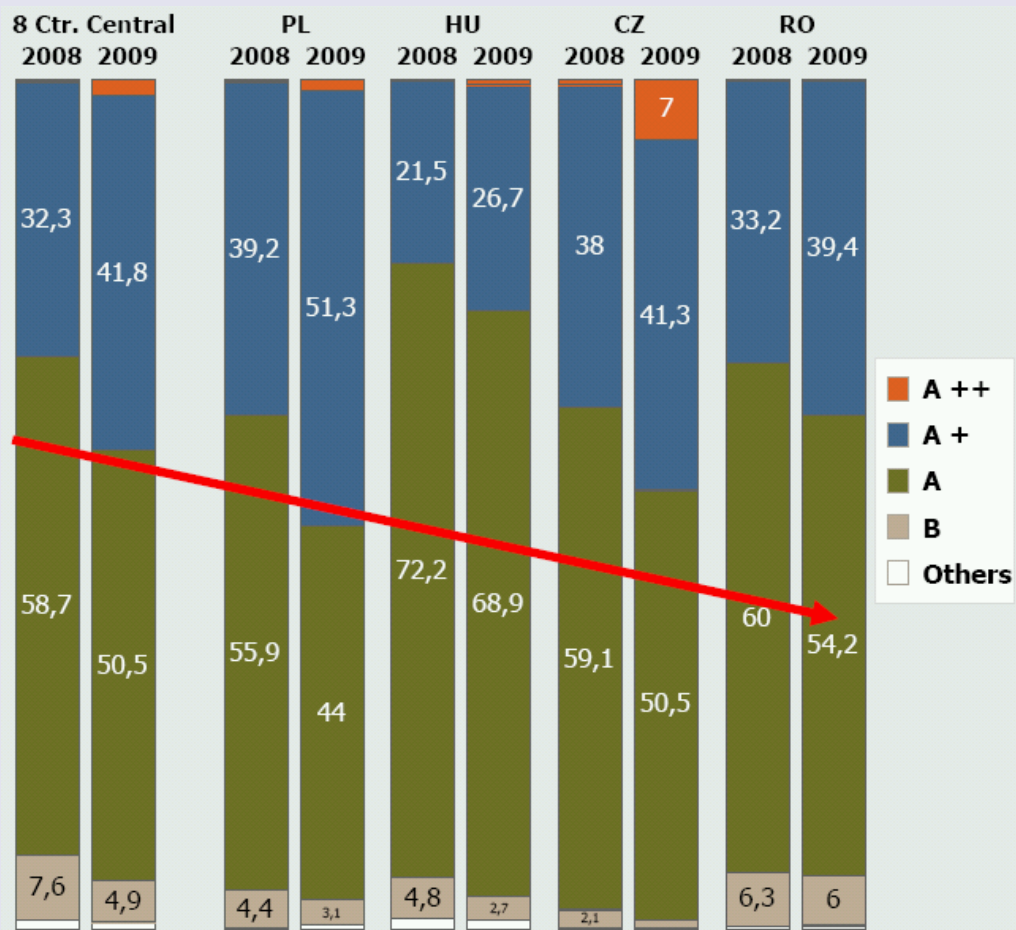
Effects of the legislation

Sales of cooling appliances



Effects of the legislation

Sales of cooling appliances



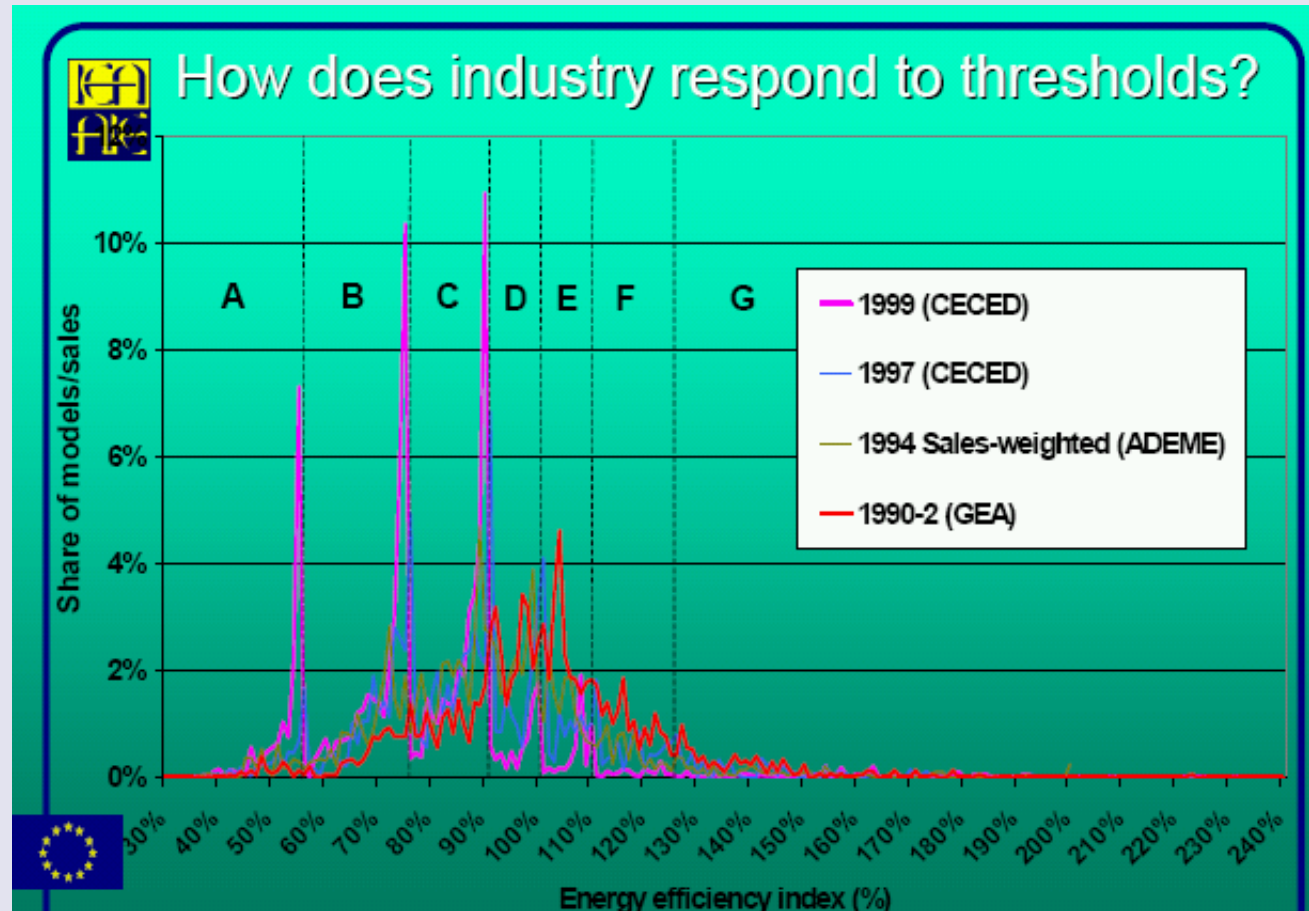
Bottlenecks

- Lack of harmonization between labeling, ecodesign and other (voluntary) labeling schemes (Ecolabel)
 - Fridges - only A and better available since July 2010
 - Revision of the labeling scheme only in 2014
- Lack of promotion towards consumers
 - „Ban on incandescent lights“
 - Rather complex process



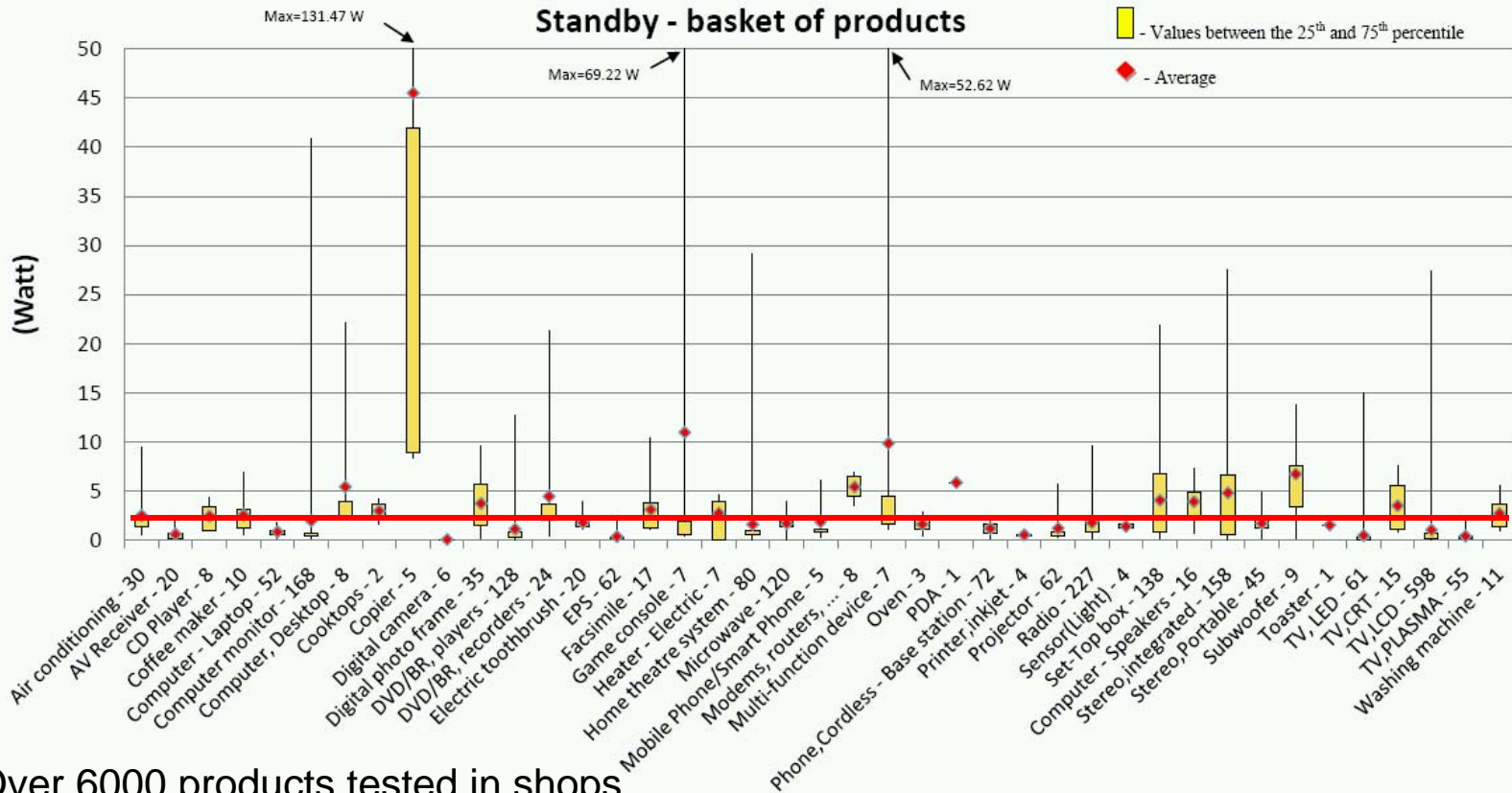
Monitoring and verification activities

Why needed?



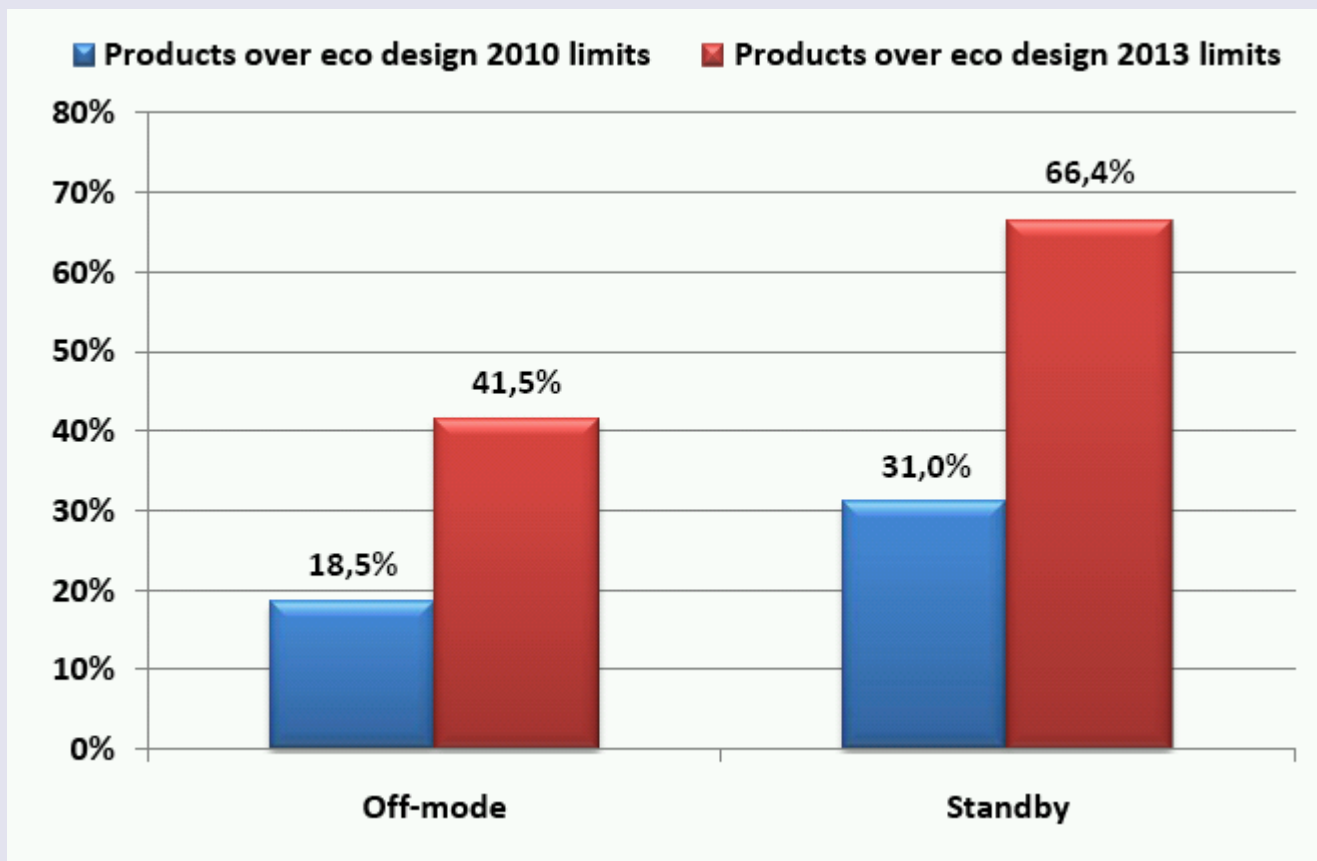
Monitoring and verification activities

Why needed?



Over 6000 products tested in shops

Monitoring and verification activities



Monitoring and verification activities

- Lack of capacity, funding and priority by authorities
- Need both for test of appliances and shop visits (for labeling)
 - Atlete (Testing 80 refrigerators and freezers (follow www.atlete.eu)
- Need for exchange of information
 - Among the monitoring authorities

Constant growth in consumption

- Despite the activities – more appliances, bigger, more functionalities..
- Space for consumer behaviour – educate the consumer
- Promotional activities
 - Go beyond legislation
 - Examples: Topten

topten.eu Best Products of Europe

Cars Household Lamps Office Equipment Consumer Electronics Building Components

You are here: [Home](#) > [Consumer Electronics](#) > [TV](#) > 70 to 90 cm

[Recommendations TVs](#) [Selection Criteria Television sets](#) [XLS Download](#)

compare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brand	Samsung	Sony	Samsung	Sony	Sharp	Samsung	Sharp		inefficient model
Model	UE32C4000	KDL-32EX710AEP	UE32C5100	KDL-32EX600	LC32LE705E	UE32C6000	LC32LE700E		
Similar Models		KDL-32EX711	UE32C5000		LC32LU705E LC32LX705E	UE32C6500 UE32C6600	LC32LX700E LC32LU700E		
Electricity costs (€ in 10 years)	99	155	123	136	134	132	134		230
Screen diagonal (cm)	80	80.1	80	82	80	80	80		66
High Definition	HD ready	yes	Full HD	yes	Full HD	Full HD	Full HD		
Resolution	1366x768	1920x1080	1920x1080	1920x1080	1920x1080	1920x1080	1920x1080		1366x768
Brightness (cd/m²)	n/a	n/a	n/a	n/a	450	n/a	450		450
DVB Receiver	T/C	T / C (Cl+)	T/C	T / C (Cl+)	T/C (Cl+)	T/C	T/C		
Technology	LCD-LED	LCD-LED	LCD-LED	LCD-LED	LCD-LED	LCD-LED	LCD-LED		
Power On (Watt)	45	52	56	61	60	60	60		100
Power Standby (Watt)	0.06	0.2	0.06	0.19	0.2	0.06	0.2		1
Efficiency Index	0.31	0.36	0.39	0.4	0.41	0.41	0.41		1.04
Available in countries	on demand	on demand	on demand	on demand	on demand	on demand	on demand		on demand

07/10/2010

- Despite the unitary consumption decrease, overall electricity consumption increases
- Policies in EU are in place or under development, but there is a need for
 - Strengthening of monitoring, verification and evaluation activities
 - Sharing of information
 - Promotion towards customers

Thank you for your attention.

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- www.uspornespotrebice.cz